

WARREN C. SCHULTZ

History Department – DePaul University – Chicago, Illinois – USA

RE-EXCAVATING THE EXCAVATED: ANALYZING MAMLUK DIRHAM HOARDS FROM JORDAN VIA THEIR PUBLISHED REPORTS, AND WHY THAT IS WORTH DOING

Abstract

Five sizeable hoards of Mamluk silver dirhams have been found in Jordan since 1963. This paper focuses on three of these hoards, with the aim of making this numismatic data available to wider conversations about the Middle Islamic period in Jordan and Mamluk money. The first hoard discussed contains roughly 1100 Crusader and Mamluk silver coins found at the site of Dh̄bān in 1965. The second hoard consisted of more than 2200 dirhams found at Kerak in 1963. The third hoard consists of 68 Mamluk silver coins found in 1987 at the site of El-Lejjun. In all three cases, access to the actual coins found in these hoards is problematic, as not only are they preserved in multiple locations, but in at least one case, coins were distributed from the initial hoard and thus are not recoverable. Furthermore, while all three of these hoards have been published, the information found within has not been integrated into wider studies of the material culture of the Middle Islamic period in Jordan.

Keywords

Mamluk, Dirhams, Silver, Hoards

INTRODUCTION

The circular for this symposium identified five key themes for its participants: Islamic coins in archaeological excavations; coin use and coin circulation; mint production and coin circulation; coin hoards; and mints and monetary areas. My contribution touches upon the first, second, and fourth of these themes by discussing hoards of Mamluk silver dirhams found at sites in the Hashemite Kingdom of Jordan. This region was a rural hinterland for the Mamluk period (648-922/1250-1517). While in general the majority of archaeologically-found Mamluk coins in Jordan consist of single or small group finds of copper coins (*fals*, pl. *fulūs*) or silver dirhams, of notable exception to this statement are five large hoards of dirhams. These have been found at Kerak (*Karak*) in 1963, at Dhiban (*Dhībān*) in 1965, at Tell Hisban (*Tall Ḥisbān*) in 1971, at el-Lejjun (*al-Lajjūn*) in 1987, and at Umm Qeis (*Umm Qays*) in 2002.¹

In doing this, I begin to address a lacunae in the wider discussion of archaeological finds from Middle Islamic Jordan. Writing in 2008, Alan Walmsley observed that while most authors interested in this period have addressed the ceramic evidence of the period, “the non-ceramic finds from the twelfth to fifteenth centuries reveal the richness of the period, but little has been adequately reported.”² Walmsley also stated that:

Non-ceramic finds manufactured from materials including stone, glass, ivory, bone and metals have only been sporadically mentioned and erratically described, as most writers with any interest in middle Islamic Jordan have concentrated on pottery in an attempt to establish a basic ceramic chronology for the eleventh to fifteenth century. Accordingly, no general survey can be offered at this time.³

After briefly mentioning some of the categories of non-ceramic finds—including coins—found at specific sites, he went on to mention that:

While the evidence is tantalizing for an abundant and varied cultural horizon in Ayyubid and Mamluk Jordan, the available evidence continues to be patchy and incomplete. Until large scale systematic excavations are undertaken on a series of major Ayyubid and Mamluk sites in Jordan (which would probably require working in currently occupied towns in some instances), and while existing excavations remain unpublished, *the prevailing view of “Ayyubid-Mamluk Jordan equals only rough hand made pottery” will persist unchallenged* [emphasis added].⁴

¹ This paper will use the anglicized versions of these place names, since they are more commonly encountered in the respective publications.

² WALMSLEY 2008: 530.

³ WALMSLEY 2008: 530.

⁴ WALMSLEY 2008: pp. 530-31.

While this situation described above has improved over the last decade,⁵ the systematic incorporation of middle Islamic numismatic evidence into wider discussions of the period in Jordan remains in its early stages. The worthy goal of adding numismatic data to conversations based upon the rich ceramic evidence is hindered, however, by the fact that coins are not listed in the databases of JADIS, (Jordan Antiquities Database and Information System) or MEGA-Jordan (The National Heritage Documentation and Management System). While there are good reasons for not including coin data in these resources, its absence from them makes it necessary to re-excavate these coins from the publications in which they are mentioned. Working on this is not without its challenges, however, as I point out below.

THE MAMLUK SILVER HOARDS OF JORDAN

There were no Mamluk mints located in what is now the Hashemite Kingdom of Jordan. The main Mamluk mints were located in Cairo and Alexandria in Egypt, and in Damascus, Hamah, Tripoli, and Aleppo in greater Syria. Nevertheless, Mamluk coins from all of these mints have been found in excavations in Jordan.⁶ While most finds have been individual or small groups of copper *fulūs* and silver dirhams, there have also been five finds of Mamluk dirham hoards found in Jordan. These five range in size from 66 coins to more than 2000. In this paper I focus on three of those hoards: Dhiban; Kerak; and el-Lejjun, and comment only briefly on the remain two, Umm Qeis and Tell Hisban. There are two different reasons for not including these latter two hoards in this paper.

I do not discuss the Umm Qays hoard in any detail because it has not been published. All we know about it is derived from the brief description in the initial field report.⁷ The hoard was found in a small ceramic jar and contained 533 coins. Of these coins, 528 were silver and the other five were identified as “gold Crusader coins.” The photograph of the hoard included in the field report allows for two additional observations. It shows a pile of silver coins and those on top of the pile are easily identified as Mamluk dirhams from the first 150 years of the sultanate. (They differ in size, weight, fineness, and design from the later dirhams of the ninth/fifteenth century.) The image also included the five gold coins displayed in a row below

⁵ See WALKER 2011.

⁶ See SCHULTZ forthcoming. The topics of how these coins arrived in these locations, and what was their purchasing power are beyond the scope of this presentation.

⁷ TAWALBEH 2002: p. 625, “Numerous Ayyubid-Mamluk coins are attested from various excavations, but more important is what was found in area (P) sq. (11) loc. (002): a small jar that contained 533 coins, 528 of them are silver...” The hoard is reported to be stored in the Irbid office of the Jordanian Department of Antiquities.

the dirhams. It is clear from this photograph that these gold coins are Venetian and not Crusader in origin. A thorough analysis of this hoard would be a most welcome development.

The Tell Hisban silver hoard consists of 66 dirhams found in a ceramic lamp. These coins have been published.⁸ One of the dirhams dates from the late Ayyubid period, and the remainder are all early Mamluk. I do not discuss this hoard any further here since it is a major part of a wider study currently in preparation on the Mamluk numismatic evidence from Tell Hisban.

As for the three remaining hoards, I first describe each hoard individually, and in the concluding section, discuss how some of the information about these hoards can be meshed with what is currently known about Mamluk monetary history and the wider history of Mamluk Transjordan.

THE KERAK HOARD

Perhaps the best known of these Jordanian hoards, the Kerak hoard of 2224 coins was not found in the course of an archaeological excavation, nor was it found in the famous Kerak castle. It was a salvage find discovered during a hospital construction project near the Burj al-Zāhir in the northwest corner of the fortified town of Kerak. The coins were inside a ceramic vessel. After discovery, the hoard was deposited in the Department of Antiquities, although subsequently 121 of the coins were distributed to other locations, including 50 to the museum in Kerak Castle itself.⁹ In 1986, Saleh Sari published 1476 of these dirhams in his Ph.D dissertation.¹⁰ These coins were described by Sari as all “the decipherable issues of the hoard.”¹¹

The distribution of these coins ranges from the reign of al-Malik al-Muẓaffar Quṭūz through that of al-‘Ādil Kitbughā (694-6/1294-6). The vast majority of them date from the reigns of al-Malik al-Zāhir Baybars (658-76/1260-77), totalling 642 coins, and that of al-Malik al-Manṣūr Qalāwūn (678-89/1279-90), totalling 647. The mints represented in the hoard are Cairo, Alexandria (one coin only), Damascus, and Hamah. There also many coins lacking a mint name, which, by careful comparison of Sari’s descriptions to published typologies, might lead to further information useful information about these mintless dirhams.

⁸ TERIAN 1974 . These coins were distributed between the Jordanian Department of Antiquities and the Horn Archaeological Museum at Andrews University, Berrien Springs, Michigan, USA.

⁹ SARI 1986 (A): pp. 2-3; AL-ŞARĀYRAH 2010.

¹⁰ SARI 1986 (A), SARI 1986 (B).

¹¹ SARI 1986 (A): p. 3.

Another publication published in 1986 contains conflicting information about this hoard. Aida S. Arif's *A Treasury of Classical and Islamic Coins: The Collection of the Amman Museum*, described the hoard as follows:

The other resounding figure of two thousand and eighty-seven coins in the Kerak Jar is mainly Islamic coins of the Fatimid, Ayyubid, Mamluk and Ottoman dynasties, where almost every ruler is represented. However, al-Zahir Baybars, the Mamluk Sultan leads the others by having 747 coins struck in his name. He is followed by Qalawun with 697 coins. The last, among the rulers, whose coins are included in the same jar, is the Ottoman Sultan Salim III.¹²

Arif's catalog was put together before Sari's indepth analysis was published. I have not found any corroborating evidence or testimony that later Mamluk or non-Mamluk coins were found in the hoard. As a specialist in Mamluk numismatics and as the only person to have studied this hoard indepths, I think that Sari's conclusions are to be preferred. That said, Arif's volume does provide some photographs of coins from the hoard, although this is difficult to pin down with precision. It contains a brief catalogue section devoted to Mamluk coins, at least three pages of which are linked to what is called "Kerak Jar – Silver Coins."¹³ Photographs containing the obverses and reverses of several individual Mamluk coins are found on some of the plates, and two photographs of what is presumably at least part of the hoard are also included.¹⁴

THE DHIBAN HOARD

The Dhiban hoard of silver coins was found in a ceramic jar during the course of the 1965 ASOR-sponsored excavation season. A brief mention of the hoard is found in the published summary of that and two preceding seasons:

As if to preserve a record of the final chapter in the story of Dhiban's occupational history, a jar containing approximately 1100 Crusader and Mamluke silver coins was found in a drain... News of the discovery of the coins spread like wildfire throughout the region. Soon the alchemy of rumor and imagination transformed the silver into gold and Amman and Jerusalem, for a time, were buzzing with wild accounts of the richness of the find. Their real value, however, was their confirmation of the ceramic evidence that the occupation of the ancient site of Dhiban (the northern mound) and come to an end by the fourteenth century C.E."¹⁵

¹² ARIF 1986: p. xi.

¹³ ARIF 1986: pp. 126-40 for the Mamluk coins section, and pp. 127-29 for coins linked to the hoard.

¹⁴ ARIF 1986: Photographs of Mamluk coins are found on plates J.11207, J.11265, J.8108, and J.11212. See pp. 295 and 298 for two photographs of a pile of Mamluk dirhams.

¹⁵ MORTON 1989: p. 232. As of 2010, the hoard and its original jar were on display in the office of the Department of Antiquities' Dhiban regional director.

Even with this buzz, however, it took many years for the hoard to be studied. In 1991, Iyad al-Misri made its Mamluk coins the subject of his Masters thesis at Yarmouk University.¹⁶ I am not aware of any subsequent publication of this thesis. Al-Misri's work remains the crucial resource for the hoard, and since many may find access to this work to be difficult, I briefly present al-Misri's high-altitude findings here.¹⁷ The original count of the hoard was 1124 coins. Al-Misri was able to identify 449 Mamluk dirhams. The earliest coin of the hoard date from the reign of the sultan al-Malik al-Manṣūr 'Alī b. Aybak (655-57/1267-59), the latest from that of al-Malik al-Ṣāliḥ Ṣāliḥ (752-55/1351-54). However, it should be pointed out that since al-Nāṣir Ḥasan had two reigns (first: 748-52/1347-51; second 755-62/1354-61), it is possible that some of his coins without a legible date may come from the second reign, which followed that of al-Ṣāliḥ Ṣāliḥ. This raises the possibility of a slightly later terminal date for the hoard. Be that as it may, the identified coins from the hoard are summarized in Table 1.

The remaining coins were not attributable to a specific sultan. As for mints of origins, the majority of these 449 coins lacked a legible mint, but 142 can be linked to the mints of Cairo, Damascus, Aleppo, Hamah, or Tripoli. In some cases, al-Misri was able to link specific specimens to the typology of Mamluk coins found in the foundational work of Mamluk numismatics.¹⁸

Before leaving this discussion of Dhiban, it is worth mentioning that a small hoard of 15 Mamluk dirhams was subsequently excavated at Dhiban in 2003 by the Jordanian Department of Antiquities.¹⁹ I have been unable to locate any additional information beyond what was published in the brief field report: That these coins were found in a ceramic jar; and that the hoard contains one dirham from Ḥamāh bearing only the royal *laqab* al-Malik al-Nāṣir without a personal name (*ism*), two coins of al-Zāhir Baybars without mint names, three of al-Manṣūr Qalāwūn without mint names, five Cairene dirhams of al-Malik al-Nāṣir Muḥammad, and four specimens worn smooth from wear and thus unidentifiable.

¹⁶ AL-MIṢRĪ 1987.

¹⁷ Through the assistance of Bruce Routledge, I acquired a photocopy of the thesis. Unfortunately, however, my copy is missing pages 36 and 57 from the catalog section, and thus I have no information about coins 23-26 (four coins of al-Malik al-Zāhir Baybars) and 93-97 (five coins of al-Malik al-Nāṣir Muḥammad). In addition, the poor quality of my copy renders the plates unusable for identification purposes.

¹⁸ BALOG 1964.

¹⁹ AL-MAHĀMĪD 2003.

Table I – Sultans and Coins in the Dhiban Hoard

SULTAN	NUMBER OF COINS IN THE HOARD
Al-Manşūr ‘Alī b. Aybak	1
Al-Muzaffar Quṭuz	1
Al-Zāhir Baybars	39
Al-Sa‘īd Baraka Qān	4
Al-‘Ādil Salāmish	2
Al-Manşūr Qalāwūn	33
Al-Ashraf Khalīl	4
Al-Nāşir Muḥammad	105
Al-‘Ādil Kitbughā	1
Al-Manşūr Lājīn	1
Al-Nāşir Aḥmad	2
Al-Şāliḥ Ismā‘īl	7
Al-Kāmil Sha‘bān	22
Al-Muzaffar Ḥājji	25
Al-Nāşir Ḥasan	96
Al-Şāliḥ Şāliḥ	6

THE EL-LEJJUN HOARD

The third and final hoard discussed is one of 68 Mamluk silver coins found in 1987 in the ruins of the fortress at el-Lejjun.²⁰ In the words of John Betylon, who studied these coins for the excavation report:

The latest coins from the hoard date to 1481-83. All the coins, however, show wear from circulation. Some of them are worn completely smooth from years of handling. This suggests that the hoard was deposited at el-Lejjūn no earlier than the last years of the fifteenth century, and perhaps as late as the early sixteenth century.²¹

²⁰ BETYLON 2006: pp. 438-44.

²¹ BETYLON 2006: p. 441

This is the only one of the five hoards which dates from the late Mamluk period. Nine of these dirhams date from the reign of al-Ashraf Aynāl (857-65/1453-61), 56 from that of al-Ashraf Qāyitbāy (872-901/1468-96), and three are from the late ninth/fifteenth century—as is clear from their described fabric and size—but are too worn to attribute to a specific sultan. With the exception of the three worn coins, all the coins are linked to the mints of Cairo (36), Damascus (five), and Aleppo (24). The later date of these coins is noteworthy since, as mentioned above, ninth/fifteenth century Mamluk dirhams look very different from the earlier dirhams found in the hoards of Kerak and Dhiban. These later dirhams are smaller, thinner, lighter, and feature recognizably different arrangements of the legends they bear. They also have a higher percentage of silver in their alloy. More on this below.

CONCLUSION

Thus far I have only summarized what can be found in the respective resources available for these three hoards. In this last section, I take steps toward meshing this information in what is currently known about Mamluk monetary history and thus contribute to the wider history of Transjordan in the Middle Islamic period.

An important component of the monetary history of any region at any time is the metrology of the coinage in use. Metrology has to do with both the mass of individual coins and the quality of their alloy. In terms of fineness of alloy, in general, Mamluk dirhams were around two-thirds silver and one-third copper from the beginning of the sultanate until the early ninth/fifteenth century. Those minted from that point onwards were in the 90% silver range or higher, although exceptions exist in both time periods.²² Thus it makes sense to consider the the two earlier hoards separate from the later hoard of el-Lejjun. The 1452 coins of the Kerak hoard were found to have an alloy between 65 and 75 per cent silver, regardless of their individual weight or their mint of origin.²³ Al-Misri's stated that the majority of the coins analysed from the Dhiban hoard fell into the 75 to 85 percent purity range, slightly higher than what has been found in other studies.²⁴ Without access to the actual coins, it is difficult to explain this divergence.

When it comes to the weights of these earlier dirhams, for the Kerak hoard, Sari utilized histograms in which he plotted the weights of these coins on a verticle axis of quantity and a horizontal axis of 0.05 gram intervals. On the basis of this evidence, he concluded that Mamluk silver was found in three denominations: The full dirham

²² BACHARACH 1968: pp. 310-17. C.f. BALOG 1961: pp. 139-42.

²³ EHRENKREUTZ 1988: p. 303.

²⁴ AL-MISRI 1991: pp. *mim* and 132-42.

weighed 2.89 grams; the half-dirham at 1.3 grams; and the quarter-dirham at 0.8.²⁵ These figures are problematic. Not only do they not fit the mathematical schema of full, half and quarter (one-half of 2.89 is 1.445, not 1.3, and one-half of 1.3 is 0.65 not 0.8), but when Sari's histograms are examined—he plots the dirhams by sultanic reign—they reveal a range from 0.50 grams up to 3.75 grams, with specimens falling into every 0.05 interval on the horizontal axis of weight.

Al-Misri's analysis of the weights of the Dhiban hoard are in the same vein. He stated that the Mamluk dirham weighed 2.985 grams, and described these 449 coins as consisting of 348 full dirhams, 47 half-dirhams, 7 quarter dirhams, and 47 smaller "pieces."²⁶ The weight range in which these coins fell is from 0.40 to 5.15 grams. He summarized this data in a table, which I reproduce below as Table II. Given this wide range of dates, al-Misri also concluded that Mamluk dirhams passed by weight and not by count.

This was also my conclusion reached in a study published more than a decade after al-Misri's thesis.²⁷ That study was based upon the weights of approximately five hundred dirhams from a number of public and private collections. I argued that the best explanation that accounted for this metrological evidence was that each Mamluk dirham was in effect a mini-ingot of silver, whose value was based coins on its weight when compared to an accounting value. This accounting value was based on an ideal dirham coin-weight of one dirham weight-unit of the silver alloy in use.²⁸ In other words, what mattered in any transaction involving these dirhams was not the number of coins which changed hands, but the total weight of the coins changing hands. In addition, it makes little sense to refer to lighter weight silver coins as half or quarter dirhams, since when these dirhams are charted on a weight axis, there is no clear break around whatever values those weight amounts are thought to have been. In this environment lighter weight coins are better described as fractional dirhams rather than halves and quarters. Stripped of these labels, the weights of the coins from these two hoards bolsters this interpretation.

The coins of the el-Lejjun hoard provide a small supplement to the available data on the weights of dirhams from the reigns of sultans al-Ashraf Aynāl and al-Ashraf Qāyitbāy. There is no information provided in the published description about the purity of alloy of these 68 coins, but it is probable that they were of the higher purity found in other studies of this period. When it comes to the weights of these coins, however, while Betylon's presentation of the data is problematic. Any study of coin

²⁵ SARI 1986 (A): pp. 435-44.

²⁶ Al-MISRI 1991: pp. *kāf* and *nūn*, and 143-53.

²⁷ SCHULTZ 2003 (A).

²⁸ SCHULTZ 2003 (B): where I argued, based upon material culture evidence, that the mass of the Mamluk-era dirham weight unit was around 3.0 grams.

Table II, Metrology of the Dhiban Hoard

SULTAN	DIRHAM	HALF	QUARTER	PIECE	TOTAL
Al-Manṣūr ‘Alī	1				1
Al-Muzaffar Qutuz	1				1
Al-Zāhir Baybars	31	7	1		39
Al-Sa‘īd Baraka Qān	4				4
Al-‘Ādil Salāmish	2				2
Al-Manṣūr Qalāwūn	26	5		2	33
Al-Ashraf Khalīl	4				4
Al-Nāṣir Muḥammad	92	8	3	2	105
Al-‘Ādil Kitbughā	1				1
Al-Manṣūr Lājīn	1				1
Al-Nāṣir Aḥmad	2				2
Al-Ṣāliḥ Ismā‘īl	75	11	2	19	107
Al-Kāmil Sha‘bān	20	2			22
Al-Muzaffar Ḥājī	17	7		1	25
Al-Nāṣir Ḥasan	67	6	1	22	96
Al-Ṣāliḥ Ṣāliḥ	4	1		1	6
Total	348	47	7	47	449
Source: Al-MISRI 1991: p. 21.					

weights desires the gathering of as many weights of individual coins as is possible. Except for the few cases where only one coin of any specific type was found in the hoard, Betylon grouped together all coins of the same type and provided only a weight range for the group, not the weights of each specimen in it.²⁹ Thus anyone interested in this metrological data would need to access the unpublished field

²⁹ BETYLON 2006: see coins 624-27 (range 1.19-1.48); 632-35 (range 1.45-1.55); 642-52 (range 1.36-1.55); 653-62 (range 1.42-1.52); 663-74 (range 1.42-1.53); 676-78 (range 1.42-1.46); and 679-85 (range 1.45-1.52). While these weight ranges may seem small, given that these later coins were apparently minted with greater attention paid to weight, the missing data would be useful to have.

notes (on the chance that weights were recorded there), or initiate a request to the Jordanian Department of antiquities to examine the coins themselves, recourses that would not be necessary if each coin's weight had been provided.

There are three additional monetary observations to make. The first is that the three hoards all contained coins from both Egyptian and Syrian mints. This argues against an assumption that these two major regions of the sultanate were in some part separate monetary zones. Secondly, all three hoards were found on sites known to have been on major travel routes, linked either to trade, the Ḥājj, or both.³⁰ In the case of Dhiban and Kerak, both were regional administrative centers in the Mamluk governmental network.

Thirdly, all three hoards also contained a number of coins which could not be attributed to a specific sultan or mint due to wear. In the case of the Kerak hoard, out of a total of 2244 coins only 1452 were attributable. Subtracting the 121 coins distributed to other museums, that leaves 671 coins (approximately 30 per cent of the hoard) about which we know nothing other than that they were found in the hoard. For the Dhiban hoard, only 449 out of 1124 were described. In this case, however, we do not know to what extent the remaining 675 coins not analyzed by al-Misri were illegible Mamluk dirhams or were perhaps the Crusader coins mentioned in the first published description of the hoard. The el-Lejjun hoard also contained three illegible coins. And yet the observation that these undiscussed coins were found in these hoards should remind us that, legible or not, these dirhams had value. Ignoring these worn and unidentifiable coins has another detriment. Without this information, we cannot know the total weight of the hoard. At the very least this means that we are unable to speculate about what the total value of these treasures was at their point of deposit.

The deposit dates of these three hoards, at least as based upon the latest dated coins found in each of them, leads to speculation about the possible reasons they were abandoned in the first place. In the case of the Kerak hoard, the late seventh/thirteenth century terminal date raises the intriguing possibility that its owner(s) may have died as a result of repercussions related to the Mamluk-Mongol battles and campaigns of 699/1299, 700/1300, and 704/1303. In the case of Dhiban, the mid-eighth/fourteenth century terminal date suggests not a military reason but a possible socio-economic one, perhaps related to the mid-century outbreaks of the Black Death and the subsequent Mamluk disinvestment in the region. The fact that both of these large hoards were found in ceramic containers also suggests that they were savings

³⁰ WALMSLEY 2008: p. 521, where he noted that the conflict between the Crusaders and Muslims of Syria and Egypt brought to prominence the fortress towns of Jordan, especially Kerak, and that the caravan routes ran Damascus to Busra and then probably through Lejjun ("where water was plentiful") and Kerak and beyond.

hoards, representing an accumulation of wealth gathered over time and stored in a safe location. Ceramic jars are obviously breakable, and their presence suggests that these hoards were not moved frequently, and thus would not have been in daily use. As for the el-Lejjun hoard, given its small size and location, it is tempting to suggest that it represented the portable wealth of its owner (no container of any material was noted in the published report), and was perhaps deposited as a result of predation on a trade or pilgrimage caravan.

In conclusion, the combined data provided by these hoards are a valuable resource for those interested in the history of this region in the Mamluk era. In the case of the Kerak and Dhiban hoards mentioned in this paper, years and in two cases decades passed between the discovery and subsequent analysis of these coins. The passage of this time not only increases the challenge of incorporating this information into later studies, but also necessitates that synthetic studies periodically review of material in light of subsequent developments in the field. If we are lucky enough to find additional Mamluk hoards in our lifetimes, let us hope they are described as thoroughly and as quickly as is possible, keeping in mind that when it comes to hoard analysis, every coin matters, even the illegible.

BIBLIOGRAPHY

- ARIF A., 1986: *A Treasury of Classical and Islamic Coins: The Collection of the Amman Museum*, London: Probsthain.
- BACHARACH, J. and A. GORDUS, 1968: *Studies on the Fineness of Silver Coins* «Journal of the Economic and Social History of the Orient» 11, pp. 298-317.
- BALOG P., 1961: *History of the Dirham in Egypt from the Fatimid Conquest until the Collapse of the Mamluk Empire, 358-922 H / 968-1517 AD* «Revue Numismatique» 3, pp. 109-46.
- , 1964: *The Coinage of the Mamluk Sultans of Egypt and Syria*, New York: American Numismatic Society.
- BETLYON J., 2006: *The Coins*, in S. T. Parker, ed., «The Roman Frontier in Central Jordan: Final Report on the Limes Arabicus Project, 1980-1989», Washington, D.C.: Dumbarton Oaks Research Library and Collection, pp. 413-44.
- EHRENKREUTZ A., et al., 1988: *Contributions to the Knowledge of the Standard of Fineness of Silver Coinage Struck in Egypt and Syria during the Period of the Crusades*, «Journal of the Economic and Social History of the Orient» 31, pp. 301-03.
- AL-MAHĀMĪD B., 2003: *Ḥafriyat Tall Dhībān al-ātharī mawsim 2003 m.*, «Annual of the Department of Antiquities of Jordan» 47, pp. 71-76.
- AL-MIṢRĪ I., 1991: *Nuqūd Mamlūkiyah baḥriya fiḍḍiyah min Dhībān*, unpublished MA thesis, Yarmouk University.
- MORTON W., 1989: *A Summary of the 1954, 55, and 65 Excavations at Dhiban in Jordan*, in A. Dearman, ed., «Studies in the Mesha Inscription and Moab, Archaeology and Biblical Studies» 2, Atlanta: Scholars Press, pp. 239-46.
- AL-ṢARĀYRAH M., 2010: *Al-Nuqūd al-Fiḍiyah al-Mamlūkiyah min Qal'at al-Karak*. Al-Zarqā: Ministry of Culture.
- SARI S., 1986 (A): *A critical analysis of a Mamluk hoard from Karak*, Ph.D. dissertation, University of Michigan.
- , 1986 (B): *A Mamluk Hoard from Kerak*, «Newsletter of the Institute of Archaeology and Anthropology, Yarmouk University» 2, p. 8.
- , 1988: *A Note on al-Maqrīzī's Remarks Concerning the Silver Coinage of Baybars*, «JESHO» 31, 298-301.
- SCHULTZ W., 2003 (A): *The Circulation of Silver Coins in the Baḥrī Period*, in A. Levanoni and M. Winter, eds., «The Mamlūks in Egyptian and Syrian Politics and Society» Leiden: Brill, pp. 221-44.
- , 2003 (B): *Mamlūk Metrology and the Numismatic Evidence* «Al-Masāq: Journal of the Medieval Mediterranean» 15.1, pp. 59-76.
- , 2010: *The Silver Coinage of the Mamlūk Caliph and Sultan al-Musta'īn Bi'llāh, 815/1412*, in B. Callegger and A. D'Otonne, eds., «The 2nd Simone Assemani Symposium on Islamic Coinage» Trieste, Italy: Edizioni Università di Trieste, pp. 210-19.
- , forthcoming: *Coins Where There Were No Mints: Mamluk Coins from Jordanian Archaeological Sites*, in Frédéric Bauden, ed., «Proceedings Volume of the Second School of Mamluk Studies».

- TAWALBEH D., 2002: *Islamic Settlements in Umm Qays (Gadara)*, «Annual of the Department of Antiquities of Jordan» 46, pp. 621-28.
- TERIAN A. 1974: *Coins from the 1971 excavations at Heshbon*, «Andrews University Seminary Studies» 12.1, pp. 35-46.
- WALKER B., 2011: *Jordan in the Late Middle Ages: Transformation of the Mamluk Frontier*, Chicago: Middle East Documentation Center.
- WALMSLEY A., 2008: *Non-Ceramic Finds*, in B. Russell, ed., «Jordan: An Archaeological Reader» London: Equinox, 2008, pp. 496-537.