Donald Whitcomb The Oriental Institute 1155 East 58th St. Chicago, IL. 60637

Donald Whitcomb

Reassessing the Archaeology of Jordan of the Abbasid Period

A review of archaeological research of the Abbasid period in Jordan presents an opportunity to correct two historical misconceptions. The first is that the transfer of the political center eastward with the rise of the Abbasids and development of Baghdad made Jordan a stagnant backwater so that from A.D. 750 there was a drastic decline in population and urban settlement lasting through the Abbasid period. The second misconception is that, at the end of the period in question, the fall of the Crusader states led to a renewed link between Syria and Egypt and a new era of prosperity under the Ayyubids and Mamluks so that from c. 1200 there was a great increase in population and density of settlement. The correlate to these assumptions is the proposed rise of a nomadic cultural alternative during this 450 year period. Excavations and, more importantly, intensive regional surveys have been and continue to be used to demonstrate these historical "truths" by simple tautological reasoning.

Broad cyclical patterns in history and cultural evolution may be viewed with some suspicion and here indeed are counter-intuitive. Careful reading of Abbasid historical sources may easily begin to dismantle these cycles (Hamarnah, pers. com.). Where rural areas do not have the benefit of adequate historical documentation, the archaeological record holds an added evidential importance for such revisions. That archaeology has not provided these corrections is due to a number of factors: 1. There have been, and are, few specialists in Islamic archaeology; 2. treatment by non-specialists has often been neglectful (if not cavalier); 3. there has been an excessive reliance on the pioneering work of Sauer at Hesban; and 4. the pernicious system of the "pottery reader" has stiffled advancement in this field.

The current state of the archaeology of this period precludes any synthesis or meaningful discussion of settlement patterns. Happily though, in recent years, a combination of personnel and projects, dedicated to understanding the early Islamic period, has begun to rectify this situation and to prove the value of archaeology as an historical discipline. The purpose of this paper is to present a brief

view of the background of Abbasid archaeology and to present, in a preliminary form, very recent developments which will lead to historically accurate assessments of sites and settlement patterns.

Ever Since Heshbon

Sauer's masterly presentation of the sequence of ceramics from Tell Hesban and their historical correlations in Jordan (1973) gives full consideration to the Islamic periods found at Hesban. The particular historical interpretation which Sauer applied to his archaeological data has a general currency in secondary literature; nevertheless, the broad impact of Sauer's study has meant wide-spread acceptance of these ideas among archaeologists and scholars in other fields. His analysis of the Abbasid period is concise:

"There is no literary evidence for Heshbon in the Umayyad period, but it would seem likely for the site to have been abandoned as a result of the ca. A.D. 750 'Abbasid takeover in Palestine'.

"The numismatic and literary evidence would indicate that there was probably a major occupational gap at the site between ca. A.D. 750 and ca. A.D. 1200. Only a handful of Palestinian sites have contributed published pottery from the intervening Early Islamic periods ('Abbasid, Fatimid, Seljuq-Zengid). With the Ayyubid/Mamluk pottery of Heshbon a whole new spectrum of ceramic features will need to be described." (1973: 49).

Understanding of the situation at Hesban was already being modified that same year, 1973, with "improved ceramic distinctions", "Abbasid glazed ware now stratigraphically identifiable", and a literary reference to post-750 occupation (Boraas and Horn 1975: 113, 138-139, 170-171; Grabar 1964). The most recent stratigraphic assessment of Hesban has altered the "post-Stratum 4 gap" to periods VA (750-969) and VB (969-1200) (Boraas and Geraty 1978: 16). It is hardly surprising that interpretations in a respected excavation might evolve over the years; what is disturbing is that documentation of the ceramic evidence for the reinterpretations has not been forthcoming.

Specifically the identification of Abbasid ceramics, the

primary diagnostic for archaeological dating, remained Sauer's to define. Although he categorized sites as having Abbasid components, his definition of Abbasid materials was not spelled out nor were the historical implications recast. Thus, having stated in 1982, "most major sites [and Umayyad 'castles' in the desert] were abandoned or essentially abandoned at the end of the Umayyad period," he simply lists sites in Jordan with Abbasid pottery as: Amman citadel, Hesban, Mount Nebo, Dhiban, and Deir 'Alla, all of which continue into the Early Fatimid period except for Mount Nebo (1982: 332-335). In 1986 Sauer claimed Abbasid pottery was found only on the following sites: Hesban, Dhiban, Mount Nebo, and Deir 'Alla (Amman citadel, with pottery corpora available, is omitted). The same explanation is offered as in 1973, "When, with the harsh Abbasid takeover in A.D. 750, the center of Islamic civilization shifted from Syria-Palestine to Iraq, East Jordan declined rapidly. ... Most sites would seem to have been abandoned at the end of the Umayyad period, some never to be reoccupied, and some to be resettled only several centuries later in the Ayyubid and early Mamluk periods" (1986: 304).

Thus the archaeological paradigm established in 1973, the sharp break in settlement in A.D. 750 and rise of nomadism/sparcity of settlement for the following 400 years, remains unchanged. Virtually every archaeologist working on the early Islamic period in Jordan has, at some time, accepted this paradigm and interpreted his evidence accordingly. Now, the weight of contradictory evidence is beginning to produce new interpretations, as noted above.

Archaeology and History

The Sauer paradigm contains a less obvious problem, one which has the effect of impairing archaeological development. This is the use of precise historical dates (usually based on political history) to define archaeological periods. Unlike more remote periods when archaeologists must be satisfied with broad centuries, more recent historic periods commonly have been defined by dates to the precise year. Most archaeologists treating the Islamic archaeology of Jordan divide periods by the chronological dates of the ruling dynasty. This results in obscurring the differences between political history and archaeology, leading to misconceptions on the parts of both historians and archaeologists.

For instance, the use of dynastic dates carries the implication that cultural change is synchronous with political change. Studies in patterns of change suggest a lag in material culture of at least two generations. Likewise, the use of dynastic names implies political and cultural influence for dynasties never directly centered in Jordan; such identifications should properly be the result of detailed research. In addition, both dynastic dates and names obscure research into regional cultural changes.

Thus a preliminary step toward clearer understanding of the Abbasid and other Islamic periods would be adoption of neutral periodization. There is little reason not to continue the archaeological practice of periods based on century divisions. The periodization presented here is heuristic; it is likely that archaeologists will concur, in the future, on other dividing points (e.g., A.D. 950) based on the results of evidence from the field.

POLITICAL PERIODIZATION

49	91	630 75	50 96	59 117	71 12	63	15	16		191	18
	late Byz.	Um.	Abbasid	Fatimid Crusader	Ауу.	Mam	Mamluk		Ottoman		
			Caliphal	High Islam				post-medieval			
	late Byz.	Early Islamic 1		Middle Islamic 1		Middle slamic 2	La Islaı 1		Late Islamic 2	modern	
600 800 1000 1200 1400 1600 1800									00		

ARCHAEOLOGICAL PERIODIZATION

Sauer listed, in 1973, the relevant Abbasid sites in Palestine as: Khirbet al-Mafjar, Abu Ghosh, Khirbet al-Karak, ar-Ramla, Ganci-Hamat (Tabariyah) and Jerusalem. It is interesting that not one of these sites is Transjordanian. This present paper, as Sauer's later work, will confine attention to sites in Jordan for lack of space; obviously it will be necessary in the future to augment this study with evidence from Palestinian sites. Some preliminary information may be found in

Whitcomb 1988a.

It should be noted and emphasized that, while this paper presents a critical view of Sauer's position, this should not be confounded with the respect which all archaeologists working in Jordan bear for this teacher.

While period designations in arbitrary centuries will prove more useful for discussing settlement patterns and other cultural manifestations by the archaeologist, the system does violence to the sensibilities of the historian. The Early, Middle, and Late Islamic periods proposed are descriptively awkward (as indeed are earlier archaeological designations, e.g., "Middle Bronze IIA"). Thus dynastic labels will continue but with a chronological caveat that, in the present case, "Abbasid" refers to the period A.D. 800 to 1000 and "Fatimid" encompasses A.D. 1000 to 1200.

A corollary for problems arising from dynastic dating systems may be seen in reliance on numismatic evidence. The rarity of Abbasid issues in excavations parallels known production of mints in Palestine (Qedar 1980). Except for a few issues in the early ninth century, there is no mint activity until the Tulunids (A.D. 890) and then only at Filistin (ar-Ramla?). The production of the 14 mints in Palestine under the Umayyads may parallel minting in other areas. Miles observed, concerning the rarity of Abbasid issues in southern Iran, that "it is possible that the large volume of copper struck met the needs of most communities throughout the East for several centuries" (1959: 4-5; see also Whitcomb 1985: 19-28). Factors of production, distribution and deposition must be considered when using these dated artifacts; coins, like C¹⁴ dates, may only confirm a chronological interpretation and can otherwise be discarded.

After Pella

Turning to historical sources and to recently discovered archaeological evidence for the Abbasid period, a convenient beginning may be found in Walmsley's detailed thesis on the administrative organization and patterns of settlement development in Filistin and al-'Urdunn (1987). Briefly, he sees an early Islamic system set up under 'Omar and lasting three centuries; this system changed, probably under the Ikhshidid hegemony beginning in 937, to reflect the fortunes of settlement dynamics in the tenth century (1987: 157). The detailed tenth century A.D. descriptions by al-Maqdisi may be his own innovative analysis or may embody the Fatimid organization. Walmsley has assembled this data, drawn from historians and geographers, into probable patterns of settlement (1987: Chapter 6, Table 15). While many will argue with his conclusions as based on too limited data, this study is a most useful heuristic position. What is very clear is that archaeological research (used to a very limited extent in this thesis) will provide fundamental new data for consideration.

The detailed report on the excavations at Pella (Fihl) appeared the same year as the Hesban ceramics (Smith 1973). Smith, carefully researching and publishing the

limited Islamic materials, found elements stretching from the Abbasid through the late Mamluk (1973: 236-43). Sauer, in his review of this work, saw only a limited early Mamluk occupation (1260-1400) (1974); now it appears that Smith may have been closer to the mark. This revision stems from the recent work of Walmsley, whose excavation of Umayyad residences has produced the only clear case in Jordan of destruction from the A.D. 747/8 earthquake (McNicoll and Walmsley 1982; McNicoll et al. 1982). More importantly for the question of Abbasid settlement in Jordan, there are indications of continuation into this period, an hypothesis now being pursued through further excavations (Walmsley 1986).

"The delayed recognition of 'Abbasid settlement levels at Fihl is attributable to a number of factors. In particular there is a marked reluctance to acknowledge any permanent occupation of the site after the late Umayyad earthquake, a view which continues to find support from Smith ... Furthermore both Sydney and Wooster have overlooked the remains of the successive Islamic settlements in the centre of the tell by concentrating on the east and west ends of the mound. Finally as the 'Abbasid houses were probably demolished to make way for the Ayyubid/Mamluk village ..., the remains of this settlement are obscurred by later human activity on the tell." (Walmsley 1987: 114-115).

Elsewhere in the north of Jordan, four towns are mentioned by the Arab geographers as existing during the Abbasid period, Umm Qeis (Jadar), Qweilbeh ('Abil), Beit Ras and Jarash, (Walmsley 1987: 281-282). Each of these towns is better known as a classical site with continuation into the Byzantine and Umayyad periods. Fuller has provided documentation of these periods at 'Abil and claims an extensive Abbasid occupation (1987).2 The archaeological evidence for Beit Ras has not yet appeared, though occupation until the beginning of the ninth century has recently been claimed (Lenzen and Knauf 1987: 41).³ Likewise recent excavations at Umm Qeis (Jadar) indicate its occupation continued well into the Early Islamic 1 period, as recently demonstrated in bath structures and their vicinity (Holm-Nielsen et al. 1986; Andersen and Strange 1987).

The fourth city, Jarash, has been the focus of intensive archaeological research; the numerous excavation teams have produced a remarkable uniformity of chronological interpretation. The important exception is found in the study of Gawlikowski, in which he claims that a residential area by the South Decumanus continued well into the Abbasid period. "There is no evidence for the earthquake of 746-47 A.D. that destroyed Pella and which supposedly marked the end of Jarash as well" (1986: 115). Thus the

²Though the forms for the Abbasid period have not been published, they include flat bases, moulded wares and turban handles, all indicative of an Early Islamic 2 period (Mare, pers. com.).

An 11th century corpus of Fatimid "buff/white forms (cups, *cbriqs*, strainers)" has been noted from the site (Lenzen and Knauf 1987: 44).

⁴Gawlikowski dates these rooms near the south Decumanus by the presence in them of Abbasid coins and by the subsequent use of this area for pottery kilns associated with "Abbassid (sic) lamps, cut-ware bowls, and red-painted bowls ...buff-ware barbatino fragments and green-glazed sherds" (1986: 117). Similar pottery dated to the late ninth century, together with a Tulunid dinar, marked upper levels in the north theater (Clark 1986: 237, 239). None of this pottery has been published.

often intensive archaeological research in each of these cities has begun to produce evidence of the Early Islamic 2 period, a process impeded only by preconceptions and lack of publication of evidence. The ubiquitous Ayyubid/ Mamluk on these sites may also yield evidence of occupation in the Middle Islamic 1 period. The cycle of "gradual decline" and "renewal" may be correct but may, in part, be definitional from preconceived interpretation of artifacts.

Amman stands alone in the al-Balqa' region as a primary urban site, according to historical documentation. The city is known archaeologically from work done on the citadel (but see Northedge 1989), where the well-preserved structures are agreed to belong to the Umayyad period. Yet al-Maqdasi states that in the late tenth century "Amman lies on the border of the desert and has many villages and wheat fields around it. The al-Balqa' district, of which it is the capital, is rich in grain and flocks; it also has many streams, the waters of which work the mills. The Castle of Goliath is on the hill overhanging the city." (Le Strange 1890: 391-392). Excavations have revealed Umayyad houses (Harding 1951), though more recent excavations showed clear continuations into the Abbasid and Fatimid periods (Bennett and Northedge 1977-78; Bennett 1979; Northedge 1980). A summation of these results is available in Northedge's thesis, where clear evidence for these periods is presented (1984). Unfortunately this evidence has not yet been utilized to investigate the many Fatimid villages of this region.

Finally, Walmsley notes a series of towns in the southeast of Jordan, Ma'ab, Zughar, 'Arandel, Adhruh, Ayla (Agaba), all within the region of ash-Sharah. After admitting the difficulty of identifying early Islamic pottery in this region, he states "The supposed vacuum in the settlement history of south Jordan after the Islamic conquest, a view which Sauer (1982: 331) does not question, is an archaeological fiction, created by an ignorance of the material culture from the Early Islamic, 'Abbasid and Fatimid periods in the region" (Walmsley 1987: 182-183). The evidence from the excavations at Udhruh has not yet appeared (Killick 1987); on the other hand, evidence of Abbasid and Fatimid materials and industries (indigo and sugar) have recently been defined at Zughar in the southern Ghor (Whitcomb n.d.b). The recent excavations at Aqaba have revealed a new site, an early Islamic town with stratified materials ranging from the pre-Umayyad through Abbasid and Fatimid (Whitcomb 1987). The ceramics of this port combine products of Jordan with imports from Egypt and Iraq, allowing external chronological controls; this corpus is available in manuscript and is appearing in a series of articles (Whitcomb 1988b; 1989a,b,c; n.d.a).

In summation, recent excavations at urban sites known

from historical sources indicate no lack of Abbasid materials. The same may be expected from smaller towns and rural sites revealed through regional surveys. In direct contradiction to the earlier paradigm, Walmsley describes "the situation in the ... 'Abbasid period, during which time ash-Sham experienced a sizable net population increase on the back of a 'medieval green revolution'" (1987: 288). That surveys have not produced evidence of this follows directly from the unspecified or inaccurate ceramic diagnostics used to date sites.

Addendum: New Abbasid (and Fatimid) Ceramics

At risk of sounding trite, there are more than enough ceramics published as Umayyad and Ayyubid/Mamluk to fill in the Abbasid/Fatimid period and make it quite a respectable occupation in Jordan's history. As indicated in the chart above, the Early Islamic 2 period corresponds to the Abbasid (and Tulunid) periods in Jordan, while the Middle Islamic 1 period encompasses late Abbasid, Ikhshidid, Fatimid and Crusader hegemonies. Definition of the Early Islamic 2 diagnostics includes both those ceramics traditionally labelled "Abbasid" and elements of accepted Umayyad corpora. On the other hand, very little has been done with "Fatimid" ceramics and definition of the Middle Islamic 1 must draw heavily on the Ayyubid component of the following period. As indicated above, there is a growing corpus of published drawings and descriptions from major sites (Pella, Amman, Aqaba), as well as important smaller sites (al-Wu'eira, Khirbet Faris).5 Compilation of these diagnostics is essential for research on settlement patterns and, on a more general level, for establishing Islamic archaeology as an accepted tool in the study of the history of Jordan.

Bibliography

Andersen, F. G. and Strange, J. 1987. Bericht über drei Sondagen in Umm Qês, Jordanien, im Herbst 1983. Zeitschrift des Deutschen Palästina-Veriens 103: 78-100.

Bennett, C. M. 1979. Excavation at the Citadel (al Qal'a), Amman, 1977. Annual of the Department of Antiquities of Jordan 23: 151-159.

Bennett, C. M. and Northedge, A. 1977-78. Excavations at the Citadel, Amman, 1976: Second Preliminary Report. *Annual of the Department of Antiquities of Jordan* 22: 172-179.

Boraas, R. S. and Horn, S.H. 1975. Heshbon 1973: The Third Campaign at Tell Hesban, A Preliminary Report.

⁵The archaeological situation is hardly as bleak as painted in the beginning of this paper. Specific research into Islamic sites is taking place at Deir 'Alla (LaGro, pers. com.), at Khirbet Faris (Johns, McQuitty and Falkner 1989), and at Karak, Shobak and al-Wu'eira (Brown 1987; 1988;

and pers. com.). The excavations at al-Hallabat provide another focus for Umayyad and later periods. The excavator, Ghazi Bisheh, has encouraged and assisted most of the projects and scholars mentioned in this paper.

- Andrews University Seminary Studies 13: 101-247.
- Boraas, R. S. and Geraty, L.T. 1978. Heshbon 1976: The Fifth Campaign at Tell Hesban, A Preliminary Report. *Andrews University Seminary Studies* 16: 1-303.
- Brown, R. 1987. A 12th Century A. D. Sequence from Southern Transjordan, Crusader and Ayyubid Occupation at el-Wu'eira. *Annual of the Department of Antiquities of Jordan* 31: 267-288.
- —, 1988. Summary Report of the 1986 Excavations, Late Islamic Shobak. Annual of the Department of Antiquities of Jordan 32: 225-245.
- Clark, V. A. 1986. The Jerash North Theater. Part II, The Archaeology of the Roman Theater. Pp. 231-239 in F. Zayadine (ed), *Jarash Archaeological Project 1981-1983*, *I.* Amman: Department of Antiquities.
- Franken, H. J. and Kalsbeek, J. 1975. Potters of a Medieval Village in the Jordan Valley. Amsterdam and Oxford: North-Holland Publishing Company.
- Fuller, M. J. 1987. Abila of the Decapolis: A Roman-Byzantine City in Transjordan. PhD Dissertation, Washington University, St. Louis.
- Gawlikowski, M. 1986. A Residential Area by the South Decumanus. Pp. 107-136 in F. Zayadine (ed), *Jarash Archaeological Project 1981-1983*, *I.* Amman: Department of Antiquities.
- Grabar, O. 1964. A Small Episode of Early 'Abbasid Times and Some Consequences. *Eretz-Israel* 7: 44-47.
- Harding, G. L. 1951. Excavations on the Citadel, Amman. Annual of the Department of Antiquities of Jordan 1: 7-16.
- Holm-Nielsen, S., Nielsen, I. and Andersen, F. G. 1986. The Excavation of Byzantine Baths in Umm Qeis. Annual of the Department of Antiquities of Jordan 30: 219-232.
- Johns, J., McQuitty, A. and Falkner, R. 1989. The Faris Project: Preliminary Report Upon the 1986 and 1988 Seasons. *Levant* 21: 63-95.
- Killick, A. 1987. Udhruh, Caravan City and Desert Oasis, A Guide to Udhruh and its Surroundings. Romsey: A. C. Killick.
- Lenzen, C. J. and Knauf, E. A. 1987. Beit Ras/Capitolias: A Preliminary Evaluation of the Archaeological and Textual Evidence. *Syria* 64: 21-46.
- McNicoll, A. and Walmsley, A. 1982. Pella/Fahl in Jordan During the Early Islamic Period. Pp. 339-345 in A. Hadidi (ed), *Studies in the History and Archaeology of Jordan, I.* Amman: Department of Antiquities.
- McNicoll, A., Smith, R.H. and Hennessey, B. 1982. Pella in Jordan I: An Interim Report on the Joint University of Sydney and the College of Wooster Excavations at Pella 1979-1981. Canberra: Australian National Gallery.
- Miles, G. C. 1959. Excavation Coins from the Persepolis Region. New York: American Numismatic Society.
- Northedge, A. 1980. Survey of the Terrace Area at Amman Citadel. *Levant* 12: 135-154.

- —, 1984. *Qal'at 'Amman in the Early Islamic Period.* PhD. Thesis, University of London (SOAS).
- —, 1989. The Umayyad Mosque of 'Amman. Pp. 140-163 in M.A. Bakhit and R. Schick (eds), The Fourth International Conference on the History of Bilad al-Sham, 3rd Symposium: Bilad al-Sham in the Umayyad Period, vol. 2. Amman: University of Jordan.
- Qedar, S. 1980. The Dated Islamic Coinage of Palestine. *Israel Numismatic Journal* 4: 63-71.
- Reed, W. L. 1964. The Excavations at Dibon (Dhîban) in Moab. Pt. 2: The Second Campaign 1952. Annual of the American Schools of Oriental Research 37.
- Sauer, J. A. 1973. *Heshbon Pottery*, 1971. Berrien Springs, MI: Andrews University.
- —, 1974. Book Review: R. H. Smith, *Pella of the Decapolis I. Annual of the Department of Antiquities of Jordan* 19: 169-172.
- —, 1975. Book Review: A. D. Tushingham, The Excavations at Dibon (Dhîban). Annual of the Department of Antiquities of Jordan 20: 103-109.
- —, 1976. Pottery Techniques at Tell Deir 'Alla. Bulletin of the American Schools of Oriental Research 224: 91-94.
- —, 1982. The Pottery of Jordan in the Early Islamic Periods. Pp. 329-337 in A. Hadidi (ed), *Studies in the History and Archaeology of Jordan*, *I.* Amman: Department of Antiquities.
- —, 1986. Umayyad Pottery from Sites in Jordan. Pp. 301-330 in L.T. Geraty and L.G. Herr (eds), The Archaeology of Jordan and other Studies, Presented to Siegfried H. Horn. Berrien Springs, MI: Andrews University.
- Schneider, H. 1950. The Memorial of Moses on Mount Nebo. Pt. III: The Pottery. Jerusalem: The Franciscan Press.
- Smith, R. H. 1973. *Pella of the Decapolis*, vol. I: *The 1967 Season of the College of Wooster Expedition to Pella*. Wooster, MA: The College of Wooster.
- Strange, G. 1890. *Palestine under the Moslems*. Boston: Houghton, Mifflin.
- Tushingham, A. D. 1972. The Excavations at Dibon (Dhîban) in Moab: The Third Campaign, 1952-53. Annual of the American Schools of Oriental Research 40.
- Walmsley, A. G. 1986. The Abbasid Occupation in Area XXIX. Pp. 182-195 in A.W. McNicoll et al., Preliminary Report on the University of Sydney's Seventh Season of Excavations at Pella (Ṭabaqat Faḥl) in 1985. Annual of the Department of Antiquities of Jordan 30: 155-198.
- —, 1987. The Administrative Structure and Urban Geography of the Jund of Filastin and the Jund of al-Urdunn. PhD Thesis, University of Sydney.
- Whitcomb, D. 1985. Before the Roses and Nighingales: Excavations at Qasr-i Abu Nasr, Old Shiraz. New York: Metropolitan Museum of Art.

- —, 1987. Excavations in 'Aqaba, First Preliminary Report. Annual of the Department of Antiquities of Jordan 31: 247-266.
- —, 1988a. Khirbet al-Mafjar Reconsidered: The Ceramic Evidence. Bulletin of the American Schools of Oriental Research 271: 51-67.
- —, 1988b. A Fatimid Residence in Aqaba, Jordan. Annual of the Department of Antiquities of Jordan 32: 207-224.
- —, 1989a. Evidence of the Umayyad Period from the Aqaba Excavations. Pp. 164-184 in M.A. Bakhit and R. Schick (eds), The Fourth International Conference on the History of Bilad al-Sham, 3rd Symposium: Bilad al-Sham in the Umayyad Period, vol. 2. Amman: University of Jordan.
- —, 1989b. Coptic Glazed Ceramics from the Excavations

- at Aqaba, Jordan. Journal of the American Research Center in Egypt 26: 167-182.
- —, 1989c. Mahesh Ware: Evidence of Early Abbasid Occupation from Southern Jordan. Annual of the Department of Antiquities of Jordan 33: 269-285.
- —, n.d.a. Excavations in Aqaba: Preliminary Report on the 1986 Season. MS on deposit at the American Center for Oriental Research (ACOR) and the Department of Antiquities, Registration Centre, 1986.
- —, n.d.b. Islamic Period Sites. In B. MacDonald (ed), The Southern Ghors and Northeast 'Araba Archaeological Survey (forthcoming).
- Winnett, F. V. 1964. The Excavations at Dibon (Dhîban) in Moab. Pt. 1: The First Campaign 1950-1951. Annual of the American Schools of Oriental Research 36.