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The Excavations at Petra, 1974: Cultural Aspects of Nabataean Architecture, Religion, Art and Influence

Sir Leonard Wooley, in the James Bryce Memorial Lecture, at Oxford University in 1949, stressed the individuality of the great classical civilizations[1] of the Middle East. Yet, he said:

> . . . the measure of a nation's culture is its capacity to borrow and so to assimilate its borrowings that its individuality is enhanced by them.

Therefore, he stressed the need, in terms of intercultural study in the Middle East, of moving beyond more intensive research concerning the *major* cultures. Rather, he suggested seeking the answers to intercultural borrowings within the petty kingdoms and city-states who paid lip service to their greater neighbours, but who, essentially, remained independent[2].

Likewise, he pointed out that the study of a culture must begin with *what* it was—and then turn to *how* it came to be.

Some thirty years have passed since Sir Leonard's address and world archaeology has begun to take heed. Under the influence of anthropological and other social science disciplines, archaeology has passed through the culture-descriptive stage to the study of culture-history, to the study of culture-reconstruction, and, today, to the study of the processes by which a culture achieves its individuality.

Yet in the study of the process of culture, it is still essential to begin with a clear recognition of what that culture was and what constituted its individual characteristics. The problem is, therefore, to establish the *cultural identity* of a people as the initial stage of its study. Somewhere within the fabric of its material remains and documentary allusions to it must be found the cultural isolates which constitute its individuality.

Once the culture, as an individual entity, becomes known and has been reconstructed as a whole, it is then possible to study *process*—the reactions which were the cultural responses to basic needs and which may be observed by analysis of the recovered remains. Whether those responses extended beyond the culture boundaries to the adoption of 'foreign' influences, or adapted within their own system, can then be determined. Here, a functionalist approach is necessary and the form of a cultural attribute must be seen in the light of what it *does* for the culture, in order to ascertain the process by which that attribute came into being[3]. Culture, when developing, imposes specific determination upon behaviour, and upon the process, whether aspects are adopted from outside or adapted from within.

Nabataean studies, since George Horsfield[4] first recognized their basic non-documentary site marker, the fine thin painted ceramics, have proceeded along the traditional descriptive lines of numismatics, art history, comparative religion, epigraphy, linguistics, and the scattered documentary references in Diodorus Siculus, Strabo, Josephus and later historians[5].

Those lines, however, are cultural *traits*, not cultural *identity*, since all or almost all of the material evidences of them were, or could have been, borrowed. The problem today is, therefore, to attempt to separate the borrowings from the indigenous elements and examine the Nabataeans *as* Nabataeans, *strictu sensu*. Each cultural isolate which can be established must therefore be considered from those dual aspects. Still further, 'foreign influences', so blithe a term in traditional Middle East archaeology, must also be considered in terms of directness of appropriation, with their concomitant cultural implications, or in terms of indirect or mediated routes, which may have cultural implications far different from those seen in the direct borrowing of any element. If *exact* parallels to traits within Nabataean culture can be found, a case can then be made for direct adoption of those traits. If the parallels are not exact, then either visual remembrance, documentary reference, or even verbal communication of the trait becomes possible—as does local

[1] Wooley, Sir Leonard, *Middle East Archaeology*, Oxford, 1949: 8.

[2] *Idem.*, 9ff.

[3] Radcliffe-Brown, A. R., *Structure and Function in Primitive Society*, Free Press, 1952: 180; Malinowski, Bronislaw, *A Scientific Theory of Culture and Other Essays*, Oxford, 1960: 39, 158, 160; Carneiro, R. L., 'The Culture Process', in *Essays in the Science of Culture* . . ., 1960: 146.

[4] Horsfield, G. and Conway, A., 'A Historical and Topographical Account of the First Excavations at Petra', *Geographical Journal*, 76 (1930), 369–390 and *cf.* also Horsfield, G. and A., 'Sela-Petra . . .', *QDAP*, IX, 2/4 (1941): 105ff.

[5] Diodorus Siculus, XIX, 96 and *passim*; Josephus, *Antiq.*, XIII, *passim*, *Wars*, I, *passim*; II *Macc.*, 12: *passim*.

development of the trait as an adaptive response ('congruence').

It is with such an anthropological outlook that the work of the American Expedition to Petra has been conducted at the site since 1974. Our research design has aimed toward:

1) the reconstruction of the culture-history at Petra, and its culture changes, through time
2) the isolation of Nabataean cultural identity through recognition of its specific attributes
3) the processes which brought about that identity, along with the mechanisms by which those processes worked.

Following the traditional, necessary pattern of the culture historians, reconstruction of the culture-history of the site and of the people is being sought via the recovered material remains from excavation, with an emphasis upon methodology as a prerequisite of valid interpretation. Following the traditional pattern of the ethnographic schools, culture identity is being sought by trait/factor analysis, but in terms of the culture *system* and its holistic context. Finally, following the concepts developed by processual archaeology today, culture process and process-mechanisms are being sought through technological and other sub-system analyses. This final step is the attempt to go beyond deductive description of culture and investigate, inductively, how it came to be what it was. Involved in that step is also the investigation of the *means* by which the process took place (i.e. the mechanisms employed).

If the excavation methodology is sufficiently accurate, the data so produced will be able to be correctly ordered, the material remains properly identified, interpretation manifestly based upon valid evidence, and culture reconstruction can be achieved.

If the key and essential attributes[6] present in the data, Nabataean and otherwise, can be sufficiently isolated, the cultural identity of the Nabataeans can be established.

Finally, if proper systems analyses are conducted upon the data by archaeometric, statistical, and other means, the processes and their mechanisms can be understood.

The history of our present excavations at Petra began in 1973, with an electronically-instrumented sub-surface site survey[7]. Four proton-magnetometers and two soil resistivity instruments were employed to survey seventy-one 30 metres × 30 metres grids, with a total of some 69,900 m.^{2} covered. Some 15,975 individual stations were read at 2 metre intervals. A permanent survey markers was also established, by plane survey, at UTMG 735,160 metres East and 3,385,000 metres North, tying Petra survey data to the world grid. Thirty-eight grids were identified as high anomaly areas, potentially proftable for investigation. Of those, two were chosen for the beginning of excavations in 1974 (hereinafter: Area I, including Sites 5 *passim*, Area II, including Sites 6, 5, 2, 3, 7, 9 *passim*; Area VI was added to excavation in 1978). Area I, to the east, was excavated during the 1974–1977 seasons, with the resulting 859 stratigraphic units identified tentatively phased into twenty phases. Areas II and VI, in the grid to the West, have thus far produced 716 individual stratigraphic units, tentatively phased into nineteen phases. On the basis of the stratigraphy of Area I sites, occupation (domestic) on the north side of Wadi Musa, in the city centre, extended from the 1st Century AD through the (terminal) use of the area as a necropolis post mid-6th century AD. Early occupation floors beneath the public structure in Area II, prior to the building of that edifice, would appear to correlate with the Area I occupational range.

As a consequence of further analysis of a recently published Syriac document[8], it has been possible to date Area I, Phase X, and Area II, Phase X (the major destruction phases of both), along with a re-dating of the major destruction of the Main Theatre[9], precisely to 19 May AD 363, 'at the third and again at the ninth hour of the night'. Rarely has such a precise chronological marker been afforded for archaeology.

Preliminary phasing

Area I: Domestic sequences[10]

Phase I: Modern Surface
II: Necropolis
III: Disuse/dumping (?)
IV: Disuse/silting
V: Casual transient occupation
VI: Destruction phase
'Later House' destroyed AD 551/554 (citing Theophanes, *et alia*)
VII: Remodelling phase
'Later House' modified
VIII: Building phase
'Later House' constructed
IX: Occupation phase
shift in sector
X: Destruction phase
'Middle House' destroyed AD 363 earthquake cf. Area II, Phase X
XI: Remodelling phase
'Middle House' modified
XII: Building phase
'Middle House' constructed, cutting into parts of 'Early House' of Phase XV/XVI/XVII
XIII: Occupation
shift to western sector
XIV: Disuse/silting

[6] Clarke, D., *Analytical Archaeology*, 1968: 71ff.

[7] Hammond, Philip C., 'Survey and Excavation at Petra', *ADAJ*, XX, 1975: 5–6, and *passim*; 'Excavations at Petra, 1975–1977', *ADAJ*, XXII, 1977–1978: 81–101.

[8] Brock, S. P., 'The Rebuilding of the Temple Under Julian: A New Source', *PEQ*, 108 (1976): 103–107; Brock, S. P., 'A Letter Attributed to Cyril . . .', *BSOAS*, 40 (1977), #2: 267–86; Hammond, P. C., 'New Evidence for the Fourth Century AD Destruction of Petra', *BASOR, 238, 1980: 65–67.*

[9] Hammond, Philip C., The Excavation of the Main Theatre at Petra, 1961–1962, *Quaritch*, 1965: 65.

[10] Russell, K. and Hammond, P. C., 1979; Hammond, 1977–78: 84.

XV:	Destruction phase 'Early House' destroyed
XVI:	Remodelling phase 'Early House' modified
XVII:	Building phase 'Early House' constructed
XIX:	Occupation
XX:	Non-occupation sterile sand on bed-rock.

Area II: Temple complex[11]

Phase I:	Modern surface
II:	Non-occupation
III:	Casual transient occupation
IV:	Localized dumping and robbing
V:	Casual transient occupation/burial
VI:	Disuse/silting
VII:	Destruction phase all remaining ruins destroyed AD 551/554, cf. Area I, Phase VI (also evidenced in Area VI)
VIII:	Casual transient occupation
IX:	Disuse/silting durative
X:	Destruction phase major destruction of structure AD 363 cf. Area I, Phase X
XI:	Disuse/silting structure not in use
XII:	Disuse/silting structure not in use
XIII:	Disuse/silting structure not in use
XIV:	Disuse/silting structure not in use
XV:	Casual transient occupation structure not in use
XVI:	Disuse/silting structure not in use interior and roof fall debris
XVII:	Partial destruction probably limited to partial or complete burning of roof retrieval robbing
XVIII:	Remodelling phase replastering of decoration; no architectural changes 'Painters' Workshop' hoard Malichus II (?)
XIX:	Main building phase original construction and decoration of temple Aretas IV (?)
—	(Sub-structural occupational phases to bed-rock in process of phasing.)

[11] Hammond, Philip C., 1975; 1977–78: 84–92.

Plan

The temple structure is roughly square (17.42 metres × 17.42 metres), oriented north-south. The entry was probably closed by a double or folding door spanning the 4.36 metres wide portal. External walls were generally header-stretcher built, dressed on the exterior, 72–75 cm. thick, in the Greek manner (*emplecton*) noted by Vitruvius for rapid building. The rear corners were treated in an inset/outset fashion, as is also seen at the 'Palace of Justice' tomb. The front (south) exterior walls show plug holes for *crustae* and were presumably so treated. Interior faces were only roughly dressed for finishing, with *crustae* base mouldings, affixed by copper strips, as at the Main Theatre. All surfaces above the base mouldings were plaster-finished.

The *cella* was paved with local stone slabs, set on sandstone slab under-flooring. It was divided into side bays, set off by free-standing columns. An altar platform, axial, but set back from centre, dominated the *cella* area. The side walls of the cella were decorated with deep niches, set off by semi-columns which formed part of the actual wall build. Corners were treated by the use of two quarter semi-columns to achieve symmetry on the north–south lines of the free-standing bay columns.

Columns were drum built and rose approximately 3.62–3.65 cm. in the bays. They show no entasis and were left plain, with diagonally-dressed plastering surfaces being finished with fluting to conform to Vitruvius' Ionic style[12]. The foliated capitals, Nabataeanized–Corinthian, were extremely ornate and further decorated by the insertion of moulded plaster floral affixes. Base treatment was by the use of affixed marble rings. Numerous columns showed levis holes on their flat faces, with occasional ones also appearing on side faces.

The altar platform rose 1.31 metres above the *cella* floor level and was paved in white and black marble, set off by tesselation. Semi-columns were used along the sides and rear, forming part of the platform build, but becoming free-standing above the level of the platform floor. The capitals of the altar platform columns were likewise Nabataeanized-Corinthian, but distinguished from those of the bay columns by couchant winged felines replacing corner floral volutes[13]. At the rear of the altar platform was a crypt, with three slab shelves, closed by a door. The floor of the platform was reached by three steps on each side, closed by iron gates, on the front face. The presence of lead ties in the recovered materials suggests that the open bays between the free-standing columns of the platform may have been curtained.

Interior decoration was completely in plaster and was lavishly executed. At least three cornice levels are probable. The side niches were moulding-framed, with the central panel of each niche decorated, at least in some cases, with classical

[12] Vitruvius, *De Architectura*, III, v, iff.

[13] Hammond, 1977–78: 96; 'Capitals from the Temple of the Winged Lions, Petra', *BASOR*, 266, 1977.

'ritual' scenes, with traces of a bust appearing on the single extant panel flanking the entry on the south-west side.

The width and depth of the niche shelves, along with the recovery locations of certain artifacts, would suggest that votive statuary and other objects were displayed in the niches. Carrier blocks, in specialized shapes, were used to support the plaster cornice mouldings.

The roof was probably timber-beamed the ceiling treatment consisting of tied bundles of reeds, as noted by Vitruvius[14], covered with *tegulae*, and drained by circular pipes.

The front (south) face of the temple had an entry portico, *in antis*, extending 9.58 metres from that face, carried by a series of east–west arches. The single recovered column of the portico had drums measuring 1.35 metres in diameter, but drum heights were extremely short, which indicates the mechanical limitations of Nabataean building. The capital of this single column has not yet been recovered for identification of style. Access to the temple interior appears to have been via side stairways from the East and West sides of the portico (cf. the 'Palace of Justice' tomb).

Beyond the portico were lower cross-walls at 2.2 metres and 9.58 metres, joining a colonnaded wall on each side down the slope to the edge of Wadi Musa, a distance of about 85 metres. This double colonnaded-wall system formed the monumental entry to the temple complex and was carried by a bridge (covered?) across the *wadi*, giving access from the Paved Street. Recovered materials would suggest that the decoration of the monumental entry and bridge equalled the lavishness of the temple interior.

A marble faced and treaded stairway paralleled the colonnade on the West side of the temple proper, giving additional access to the temple area.

On the west side of the temple, the outer *cella* wall served as the east interior wall of two chambers, the upper one carried by the vaulted roof of the lower one. Entry to these chambers was by means of doorways below the portico level of the South face of the temple.

To the rear of the temple a complex of small rooms has been uncovered which are contemporary with the temple and apparently served as residences or other purposes during its period of use. Some of these rooms were later used for domestic purposes during the Late Roman (Byzantine) period.

Cultic materials

Recovered cultic materials from the temple include: a moulded 'goddess' figurine fragment; a copper/bronze lamp (?) chain fragment[15]; a bronze miniature feline head; a fragment of an Egyptian funerary statue, inscribed from Athribis in the Nile Delta region and presumably placed in the temple as a votive object because of the preserved figure of Osiris standing between the legs of the dedicant; an uninscribed, rather crude, 'eye-idol' slab; a well-executed 'eye-idol' slab, inscribed '. . . the goddess of X the son of Y' ('LHT . ḤYN . BR . NYBT); a warrior (?) bust; a carnelian ring seal showing a crowned nude goddess riding a dolphin; a pair of copper tweezers[16] (for incense?); sea shells pierced for hanging (chimes?)[17]; a pair of cymbols (?); bell fragments (*tintinabulae*); the toe of a larger-than-life local marble statue (cf. the Hercules statue from the Main Theatre); along with cultic decorative fragments. Among the latter were the feline capitals from the altar platform; fresco fragments; numerous plaster affixes, both 'tragic mask' types and naturalistic human heads (possibly dedicatory?); along the floral affixes noted earlier and frieze decoration with dolphins and urns.

Painting/plastering/techniques

Decorative paint included blue, green, black, white, orange, red, brown and fuchsia, with some gilding of decorative members. The 'Painters' Workshop' hoard has also contributed considerable technological data regarding painting/fresco technique, as well as cultural data.

Plaster cornice and moulding elements were built on the carrier blocks noted earlier and plastering was keyed using large iron nails for base coats and small copper tack for finishing coats. Some indication of mass-production of decorative elements, via multiple moulding of parts, also seems evident.

Attribution

Attribution of the temple to Al-Uzza/Atargatis has been made upon the basis of geographical location, the inscribed 'eye-idol' slab, the feline capital decorations, the feline head, the ring seal, the dolphin frieze treatment, and the markedly floral treatment of capitals, in general.

Although not verifiable, the orientation of the structure to the south may have significance in reference to the orientation of the Dushares temple (Qasr Bint Faroun), or be relative to the original Nabataean migration route into Petra, or may simply be fortuitous as a result of urban planning.

Approach to interpretation

On the basis of the material remains recovered thus far, those anticipated to be recovered from continuing excavation, and the analyses to be conducted, it is felt that our excavations at Petra are fulfilling the descriptive culture-historical demands of traditional Middle East archaeology.

Still further, the body of that data, to date, is already felt to be suggestive of probable adequacy for the more anthropologically-oriented reconstruction of culture and the observance of culture-change.

However, it is also felt that those time-honoured approaches have, as Renfrew[18] has put it, now fallen beneath

[14] Vitruvius, VII, III, iff.

[15] Identified by F. Xaiz, Recorder, 1974ff.

[16] Identified by F. Xaiz, Recorder, 1974ff.

[17] Speciated by F. Xaiz, Recorder, 1974ff. and noted as associated with the worship of Venus.

[18] Cf. Renfrew, C., *Before Civilization*, 1973.

the theoretical advances, the 'new paradigm' of the so-called 'new archaeology' developed in European and American circles during the last two decades.

As a consequence, we feel that the *processual approach* must follow completion of the traditional handling of the recovered, and yet to be recovered, data. Hence, our work to date is construed only as data *collection*, to become the basis for processual interpretation through the formulation and testing of hypotheses concerning the sub-systems of Nabataean culture. Additionally, we also stress the archaeometric aspects, as an extension of the content of primary data and the theoretical paradigms of the processual approach, and fundamentally necessary to both.

Our methodological approach to the classification of the material remains will be emic, on the basis of both theoretical inclination and the results of previous work[19]. Our framework here is polythetic, the traditional classifications in terms of Form/Material/Decoration/Function, plus the data to be recovered archaeometrically together forming the basis for typological subdivisions by attribute analysis.

Thus we hope to combine the traditional inferential outlook with the deductive, hypothesis-testing of the new schools of archaeology. By this means we feel that we shall avoid the all-to-common pitfall of the 'new' theorists of forming hypotheses concerning the obvious and the cul-de-sac of the traditional school of untested inference. We seek a non-nomothetic view of the processes of *Nabataean* cultural sub-systems, not a generic, universalistic model.

We feel that there are a number of sub-systems which will be fruitful for the application of our approach design. Obviously some of them go beyond the limits, or the evidential possibilities, of our own material and other remains alone, and will be dependent upon the work of others as well. At this point, a number of the sub-systems appear to be logical candidates for the approach we are suggesting:

1) *Cultural adoption and adaptation*

a) Direct inter-cultural adoptions within Nabataean culture: as illustrated by the temple plan, the employment of Pompeian I and II styles in decoration, the basic adherence to the Vitruvian canons, etc.

b) Direct, but re-interpreted, inter-cultural adoptions: of which the so-called 'Columbarium' has long been a prime example, but now to which may be added the dedicatory and representational use of the 'eye-idol' block, as well as the obviously female concept of it at the temple and in the recently uncovered example (in company with the Dushares block motif) in the Siq, along with the adoption of the feline and dolphin surrogates/symbols, the 'ritual' scenes of the temple frescos, the use of the *tintinabulae*, the cultically-specific sea-shell 'chimes', and the dedicatory re-use of the Egyptian funerary fragment.

c) Mediated or direct, but adaptive, adoptions: as seen in the use of the reed-bundle variation of standard (Vitruvian) roofing techniques, the sandstone slab subflooring solution to the (Vitruvian) timber-laid requirement[20], the feline replacements for capital volutes, and the non-classical substitution and choices seen in the capital motifs in general.

d) Further reinforcement of the view that Nabataean culture was far more adaptive than adoptive, as was previously demonstrated by the excavations at the Main Theatre. This reinforcement may be seen also at the Qasr and elsewhere, in terms of canonical adjustments, utilization of materials, site modification, motifs and other factors.

2) *Socio-political, economic, and demographic sub-systems*

a) Socio-political climate changes may well be reflected in the fact of the remodelling of the temple (Phase XVIII), as a reflection of anti-foreign (i.e. Roman) feeling during the reign of Malichus II, since no modification was made architecturally, but the classical 'ritual' scenes on the niche panels and the fluting on columns were unnecessarily removed.

b) Direct socio-economic and demographic data, chronologically fixed, are seen in the domestic complex repertory of household ceramic vessels, the presence and implications of imported wares, the building and rebuildings of the domestic structures, as well as in the presence of the necropolis at the end of the domestic site sequence and the casual occupation phases in Area II after the destruction of the temple, all of which point to the continuation and in varying degrees, continued vitality of occupation of the urban centre, after AD 106.

c) Economic evaluations are possible on the basis of the indications of the paucity of timber seen in the roofing and sub-flooring devices noted above, in the probability that Phase XVII of the temple reflects depressed inability to maintain monumental public buildings, in the retrieval robbery of architectural materials in that same Phase, and in the evidences of living standards displayed in the domestic sequences of Area I, along with the conspicuous sumptuousness of the temple complex taken as a whole.

d) Definition of the actual extent, routes, and type of Nabataean commerce by non-epigraphic means has been advanced, at least to some degree, by the recovery of the Athribis fragment, the presence of Pompeian Ist Style decoration and other indicators.

e) Although there already were indications of the rather high level of the female role in Nabataean social structure from epigraphic and numismatic evidences—and the nature of the economic base of the society might also

[19] Hammond, Philip C., 'A Classification of Nabataean Fine Ware', *AJA*, 66, 1966: 169ff; Hammond, Philip C., 'Another Corpus of Nabataean Pottery from Petra', *PEQ*, 1973.

[20] Vitruvius, VII, I, iff.

support that view—little other data have been available. On the basis of the recovered material remains from the domestic structures of Site I, the feminine aspect of the occupations has been obvious. This suggests the continued eminence of the role of the female population in the urban setting at Petra in later periods also. This latter aspect may be relevant to Nabataean trade patterns in the later periods. In company with epigraphic evidence, particularly from Egypt, there is the strong indication that there was little real diminuation of this pattern in the Nabataean period, *strictu sensu*, in the later periods, regardless of political considerations.

f) Diodorus and Strabo both[21] give evidence of various stages of social stratification at Petra, but there has been little attention paid to the investigation of this area, generally because of lack of archaeological evidence, even though the fact of social stratification is obvious in funerary practice. The domestic area of our excavations does provide evidence, however, which may assist the evaluation of such stratification. The geographical location, both in position and elevation, and the nature of the material remains permits examination of social stratification below the monarchial/nobility levels and above those seen from the work of Murray and Ellis and others[22]. This would have been expected, inspite of the egalitarianism suggested by the informant of Strabo (which is probably a Roman misunderstanding of Middle East customs, in any event)[23] on the basis of theoretical scaling[24] possible from data concerning other Middle East social groups, which method may now be the most feasible for approaching the problem.

3) *Habitation patterns, domestic life and urbanization*

a) Considerable detail concerning habitation patterns and general domestic life over a period of time has been recovered from the Area I domestic sequences. Included among them are house plans, space useage, household tasks, domestic equipment, furnishings, and standards of private life.

b) At the present time, we are inclined to characterize Nabataean social organization as 'organic'. That is, it arose via bedouin sedentarization, in response to the development of an economic, rather than an ideational or military system. However, further study of the process of Nabataean urbanization, best illustrated at Petra, may clarify the nature of the organizational system as well. As the earliest documentary references to the culture[25] note the absence of the able-bodied males of the settlement at a trading fair in sufficient numbers to successfully ambush and defeat the military contingent of Antigonus, while also suggesting a residual population of some size left at Petra, it would seem probable that urbanization must have proceeded via the co-development of both agricultural technology and the economic pattern adopted. That is, the adoption of a caravan-oriented economic base would, as Diodorus states, necessitate the periodic absence of a varyingly large proportion of the male population. Hence, agricultural technology would have had to advance sufficiently, probably assisted by or assisting the development of hydraulic technology, to the point where the absence of able-bodied males did not affect the subsistence base production of the residual population and was broad enough also to support the periodic enlargement of the population resulting from the return of the varying numbers of males from commercial expeditions. We would agree with the American theorists Willey and Phillips[26] that agriculture can no longer be seen as the 'indispensible' agent for sedentarization (in the Middle East, as well as elsewhere), but neither was trade, *per se*, the *sole* substitution of 'another subsistence economy of comparable effectiveness' required. Rather, we would see the movement from nomadic/semi-nomadic life of the Nabataeans as being the result of multivariant co-development of agricultural adoption and commercial enterprise along with geographical setting, previous history, potentially arable land, hydraulic ingenuity, the historical context, and other factors causal to the development of their urban and state stage. As our present excavations reveal only that period of Nabataean culture which may be described, following Willey and Phillips, as the 'Classic' and 'Post-Classic' stages[27], the rise to that point has not been further illuminated. However, following the descriptive 'stage-development' views of those same theorists along with the application of the subsistence development theories of others to this later period, much can be done in terms of formulating preliminary hypotheses to be tested elsewhere at Petra[28]. Likewise, the descriptive stage-developmental approach, freed from the chronological impediments of Middle East Research periods of the past, seems an extremely applicable one for Nabataean research[29]. The description applied by Willey and Phillips to the New World 'Classic' stage, for example, would seem to fit well with the results of our present excavations namely, a point of stage development characterized by strong central

[21] Diodorus, II, V, III, 42ff., XIX; Strabo, XVIII; Hammond, P. C., *The Nabataeans . . .*, 1973: 106ff.

[22] Murray, M. and Ellis, *A Street in Petra*, London, 1940. Horsfield, G. and A., 'Sela-Petra, The Rock of Edom and Nabatene', Ch. II, Houses, *QDAP*, VII, 1938: 15–42; Parr, Peter J., 'Excavations at Petra, 1958–1959', *PEQ*, 1960; etc.

[23] Strabo, XVIII.

[24] Carneiro, R. L., 'Scale Analysis as an Instrument for the Study of Cultural Evolution', *SWJA*, 1962: 149ff; and see bibliography of method.

[25] Diodorus, *loc. cit.*

[26] Willey, G. R. and Phillips, P., *Method and Theory in American Archaeology*, Chicago, 1958: 146.

[27] *Idem.*, 182ff.

[28] *Idem.*, 61–78.

[29] *Idem.*

government, religious thrust, a high degree of craft specialization, strong economic bases, individual (and among the Nabataeans, individualized) script, monumental and highly developed art, social stratification, and class ranking[30]. Still further, the domestic sequences of our Area I excavations and the pre-temple occupational strata of Area II would seem to provide a chronological marker for the urbanization of the city centre at Petra as do the later Area II and post-temple strata for a 'Post-Classic' stage, after Roman occupation.

4) *Ideology, religion and cult, private and public expressions*

a) Obviously the temple complex has contributed a considerable amount of material remains and other data concerning Nabataean religion and cult. However, the domestic sequences of Area I have contributed in those aspects as well and significantly, in regard to the religious life of the private citizens. Analysis and interpretation of both sets of data will, it is expected, broaden knowledge concerning Nabataean belief systems, cultic practice, and the relation between the official cult and the religion actually practiced by individuals.

b) Religious implications are most particularly visible in the absence of any Christian iconography in the domestic sequences during the Late Roman ('Byzantine') period and the presence of Nabataean cultic materials 'eye-idol' blocks, a horned altar, a miniature incense burner, and a cultic box fragment, among others—showing the continuity of the Nabataean cult through the later phases.

c) Although there is clear evidence of both a monarchial government and strong religious commitment at Petra, little evidence aside from the formal recognition of religion by the government has turned up concerning the extent of the degree of any co-relationship. The presence of obviously domestic occupation below the temple complex indicates the usurpation of that choice location for public (religious) use, assuming political involvement in the erection of monumental public buildings. Hence, a marked degree of religio-political authority may be postulated to account for the usurpation of land useage. Still further, the situation subsequent to the partial destruction of the temple (Phase XVII) may also have implications relating to the fact of the apparent withdrawal of the royal seat to Bosra at that time.

5) *Technological areas*

a) A great deal of direct and indirect data are now available in regard to Nabataean technological matters, especially in the area of architectural technology. Among these may be noted the employment of specialized metal devices, the use of specialized stonework, the fabrication and application of decorative elements, mechanics, basic construction, raw-material utilization, tool, artist-artisan relationships, and architect-builder procedures. Very specific, of course, are the data recovered in the 'Painters' Workshop' hoard and the subsequent investigation of fresco application made possible from them.

b) The temple complex has also provided examples of the Nabataean solution to certain architectural problems. These may also furnish a cross-chronological clue to the dating of the 'Palace of Justice' tomb, in that both buildings exhibit the same solution to portico support and entry access, along with both exhibiting the same revetted header-stretcher solution for build-strengthening.

c) The temple complex has also been a further reinforcement of the fact of Nabataean technological competence in the construction of monumental public buildings, as was previously demonstrated by the excavation of the Main Theatre and was evidently also the case in regard to the construction of the Qasr.

d) The temple complex has also provided a number of specifics in regard to craft specialization. These may be seen in terms of architect-builder communication, carving variations of identical motifs of mouldings, affixes, and carvings, and again in the materials from the 'Painters' Workshop' hoard. At the level of the labourer, *per se*, the grafitto on one of the column drums suggests division of labour as a recognized labour practice. The almost total decoration of the temple interior also raises the question of the relationships among the craft-group responsible for Petra's tomb-facade carving, the craft-group responsible for the interior stone trim carving of the temple, and the craft-group responsible for the architectural plastering operation(s).

e) Probabilities are now seen to exist relating to influential cultural *continua*. Technologically, they may be seen in the temple for Nabataean architectural, decorative and other craft specializations, and in the domestic *post*-Nabataean sequences, in regard to ceramic technology. These are of considerable importance if the details of the temple complex are admitted as Nabataean, *s.s.*, and the occupation of the domestic area is seen as culturally uninterrupted through the succeeding periods. If those premises are correct, then the conclusion must be reached that craftsmen and concepts persisted into the Late Roman period and hence that Nabataean influence is demonstrated throughout the later periods, probably to the onset of the Early Islamic period and, therefore very possibly *upon* it in certain elements.

Conclusion

We therefore feel that the results of our excavations at Petra thus far—and anticipated in the future—through the control of excavation in terms of stratigraphic method, the rigidity of recording procedures, and the application of appropriate

[30] *Idem.*

archaeometric analyses, will permit our utilization of new theoretical approaches to the sub-systems of the culture and hence will permit our identification of Nabataean cultural isolates.

From such research we hope also further[31] to disprove the idea of the Nabataeans as *simply* middlemen, both in commerce and in the eclectic adoption of borrowed culture, to assist them to emerge culturally in their own identity and to probe the processes by which that identity was achieved.

[31] Hammond, Philip C., *The Nabataeans—Their History Culture and Archaeology*, Astroms, *SIMA*, XXXVII, 1973: 51–52, 62–63, 74, 80, 109–110; Hammond, Philip C., 1965: 55–59, 62–63.