

A HEAD OF THE GODDESS TYCHE FROM PETRA, JORDAN

by

Joseph J. Basile

Introduction

During the summer of 1995, excavators with the Jordanian Department of Antiquities and Brown University archaeological expedition to the Southern Temple at Petra discovered, in a spoil heap in the western area of the temple's Lower Temenos, a sculpted head of local sandstone.¹

Examination of the head suggests that it belongs to Tyche, the female deity associated with good fortune, fecundity, and the protection and prosperity of cities. This paper offers the first full description and in-depth discussion of this recent find, and offers hypotheses as to its origins and influences.

Circumstances of Recovery

The head of Tyche was recovered not from a secure archaeological context but during exploration and removal of a rubble scarp running obliquely from the northwest to the southeast in the area of the Southern Temple's Lower Temenos, as defined by the Brown University excavations in 1993 and 1994. The scarp—made up of sandstone debris and other fragments—is bounded roughly on the south by the area known as the "Western Exedra" of the Southern Temple, on the east by Trench 13 of the

Brown excavations, on the north by the open flats just before the drop to the Colonnaded Street and Temenos Gate area, and on the west by the so-called "Baths" (Fig. 1). On the 1995 excavation plan, grid squares a1, a2, a3, b1, b2, and b3 all contain some of this material, which extends beyond the grid and terminates in the general vicinity of the "Baths". It was in June in grid square b2 that foreman Dakhlallah Qublan discovered the head, while removing stones for disposal (Fig. 2).²

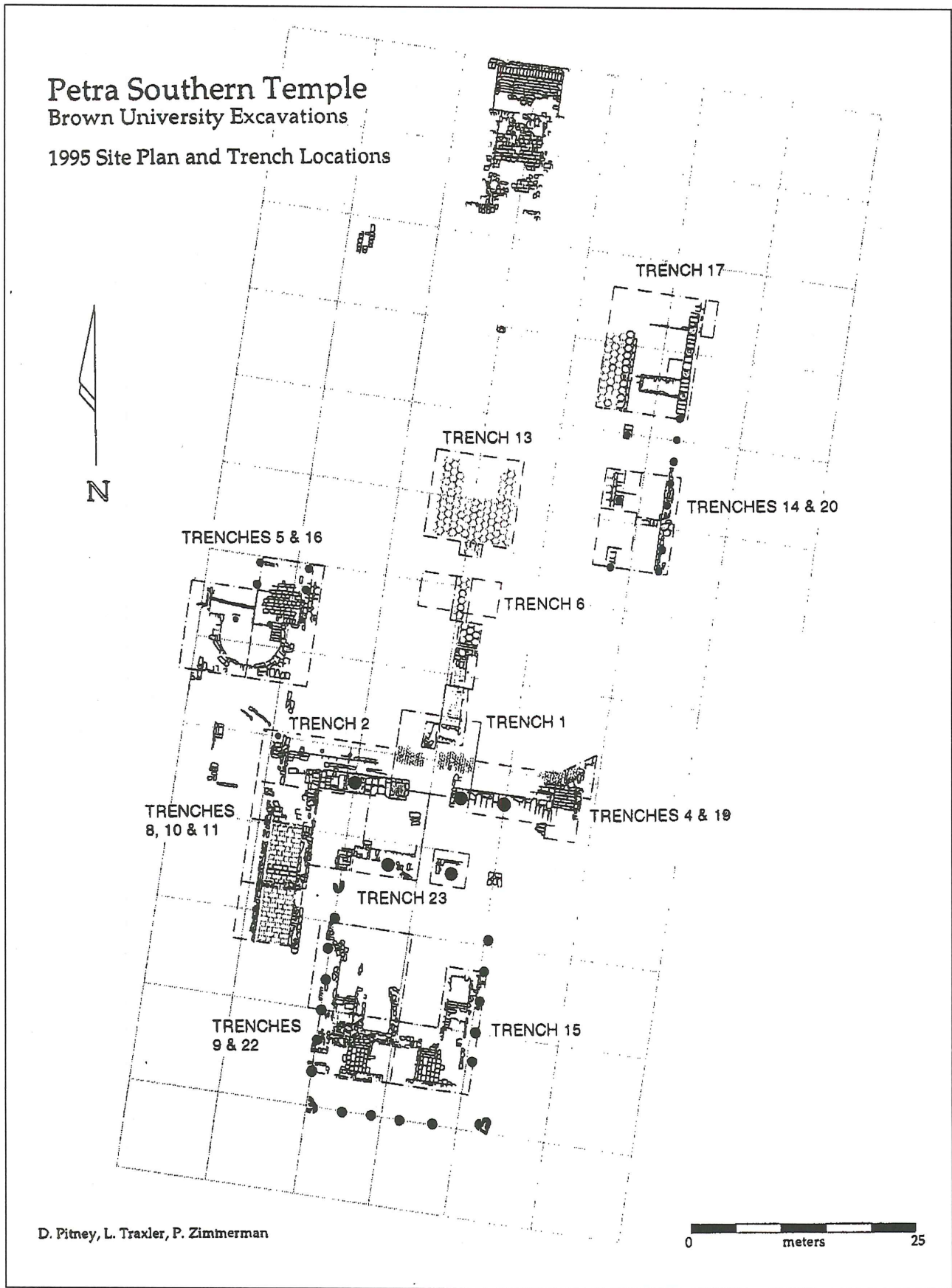
Description (Fig. 3)

The head of Tyche is sculpted of the local *al-Quwayra* sandstone, the famous red stone of the Petra valley. It is approximately life-sized. The face and right side proper of the head are badly worn and weathered, and certain details of the lips, nose, eyes, and headdress are obscured. Pockmarks mar the left side of the face; however, many important details are preserved.

The head measures approximately 40 cm from the base of the neck to the top of the head, 32 cm wide, and 35 cm from forehead to the back of the head. The face of the figure is some 24 cm high, 21 cm across, and 27 deep (from the forehead to behind the ear). The headdress measures approximate-

1. For the Southern Temple excavations, see Joukowsky 1994a: 43-5; Joukowsky 1994b: 543-4; Joukowsky 1994c: 293-322; Joukowsky 1995a: 133-42; Joukowsky 1995b: 518-20; Joukowsky 1995c: 43; Joukowsky 1996: 525-6; Joukowsky 1997: 306-7; Joukowsky and Schluntz 1995: 241-66. See also forthcoming reports in *Antike Welt*, *AJA*, *ADAJ*, *SHAJ*, and the forthcoming *Festschriften* for James Sauer and Ernest Friedrichs.
2. The head could have originally come from one of several different structures in the Central Valley,

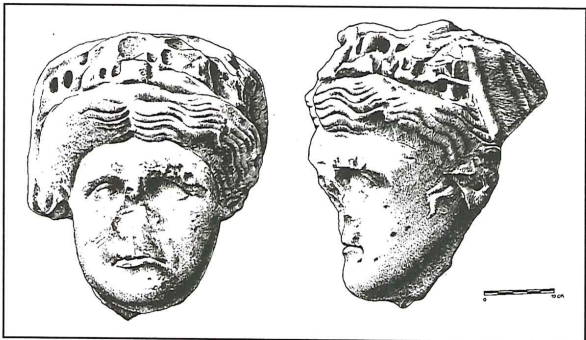
but it has been suggested that the rubble scarp where it was recovered is the spolia of the various "Baths" excavations (see below). For the Baths, see Brünnow and Domaszewski 1904: 179, 316; Bachmann, Watzinger, and Wiegand 1921: 45-8; Parr 1967-8:7-9; al-Tell 1969: 29; Zayadine 1971: 154; Browning 1973: 41, 147-50; Negev 1976: 26, 29; Khadija 1980: 208-9; Lindner 1985: 610; Zayadine 1986: 217; Zayadine 1987: 137-9; Wenning 1987: 226-7, 235, 303; McKenzie 1990: 138; McKenzie's bibliography is most complete.



1. Petra Southern Temple Excavations, 1995 Site Plan.



2. Head of Goddess Tyche from the Petra Southern Temple (A.Joukowsky).



3. Head of Tyche (J.Blackburn).

ly 32 cm across.

Formally, the figure resembles other Hellenizing sculptures from the region. The face is oval, dominated by the sweeping, gently modelled curves of the cheeks and chin. The eyes are expressive and deep-set, despite the fact that any details of incised iris and pupil – if these features existed on the piece – have been weathered away. The lips are full and rounded, with a slight downturn at the corners. Wavy hair proceeds from a part over the middle of the face and is arranged in lines running parallel to the curving line of the brow. On the left side of the figure, a curled tress falls in front of the ear (more difficult to see on the

worn right side). Details on the battered back of the head are difficult to make out, though it is perhaps still possible to see the remains of a veil being depicted, especially on the rear left. Though badly weathered, a headdress or diadem can still be discerned, with deeply carved niches forming a machicolated pattern running parallel to the line of the brow. The overall effect of the piece is one of refinement and careful execution, despite its state of preservation.

Identification

Identification of the head as that of the goddess Tyche seems fairly certain. The female aspects of the head include the treatment of the hair and certain aspects to be seen in the modelling of the face, while the attribute of the machicolated “battlement” or “turret” crown, associated with the goddess’ patronage and protection of cities, would seem to remove all doubt.

Tyche was a popular subject among the Nabataeans and other Hellenized inhabitants of Jordan, Arabia, the an-Naqab, and the Ḥawrān (Augé 1990:131-46). Indeed, Tyche already appears several times at Petra: a well-known winged Tyche with cornucopia associated with the Temenos Gate (Parr 1957: 8, pl. 4a; Glueck 1965: 410, pl. 185; McKenzie 1988: 87; McKenzie 1990: 134, pl. 59b), as well as lesser-known fragments including a Tyche head reported by Bachmann (Bachmann, Watzinger, and Wiegand 1921: Fig.37; McKenzie 1988: 94; Patrich 1990: 151), and a bust of Tyche framed in *cyma reversa* and fillet from the Petra Museum (McKenzie 1988: 94, no. 64). Fawzi Zayadine has also identified the female figure on the tholos of the al-Khazna as “Isis-Tyche”, connecting the goddess with Petra’s most famous monument (Zayadine 1980: 244). Tyche appears on Nabataean coins recovered at Petra and elsewhere (Meshorer 1975: 9-16; Ben-Dur 1948-9: 41-3, pl. 14; Patrich 1990: 75), and can be counted among the Khirbat at-Tannūr sculptures dis-

covered by Nelson Glueck,³ as well as at Wādī Ramm in southern Jordan (Savignac and Horsfield 1935: 245-78; Glueck 1965: 164, pl. 52c). Appearing in the later Roman and Christian periods are the well-known “Tyche of Philadelphia-Amman”, one of the national treasures of Jordan (Zayadine 1991: 58, pl. 58), and the Byzantine Tyche mosaics at Mādabā (Piccirillo 1986). Clearly, the iconographic type of the goddess Tyche, in her many incarnations, was as important in Jordan as in the rest of the Hellenistic and Roman East.⁴

It would be useful at this point to briefly comment on the development of Tyche as a visual type in Greek and Roman art. For Tyche was not imported fully formed into the Hellenistic East, but indeed developed there, in artistic centers such as Antioch and Alexandria. Tyche, as a minor goddess connected with fate, chance, and fortune, had a long history as a religious/intellectual concept in the Greek-speaking world, but was not a usual theme in art. Her connection to civic patronage and personification of cities, states, and regions was originally even more tenuous; goddess personifications of polities like Arcadia are already seen on Classical coins, but there is no specific reference to Tyche, just to general ideas of community fortune and patronage.

References to monumental sculptures of Tyche earlier than the Hellenistic period are scarce: Pausanias tells us that Boupolos may have “invented” the type for the people of Smyrna in the Archaic period (4.30.6), that Praxitiles created a statue of Tyche for the city of Megara (1.43.6), that Xenophon the Athenian and Kallistonikos the Theban erected an acrolithic statue of Tyche with the baby Ploutos (Wealth) in Thebes in the

fourth century BC, based on the “Eirene and Ploutos” group of Kephisodotus the Elder, c. 375-370 BC (9.16.2), and that Kephisodotus and Xenophon collaborated on a Tyche for the Megalopolitans (8.30.10). Pliny mentions a statue of Agatha Tyche in Athens (Natural History 36.23). The influence of these figures on the later Tyche type seems negligible, however. Indeed, it is not until Early Hellenistic that Tyche as a visual image becomes important in the Greek world; this shift is contemporary with a change in attitude towards Fortune, both personal and communal, in the new, strange, international and multicultural world of the Hellenistic East.

The collapse of the Classical city state, the creation of a Hellenized, multi-ethnic East under Alexander and his successors, and the influx into that new East of Greeks seeking economic and political opportunities in uncertain times, altered the realities of the ancient world in several ways. One result of these changes was an elevation of Fortune – as a concept and a deity – to a new place in Greek thinking. The worship of Fortune, in the guise of Tyche as well as several other deities, became inevitable as the peoples of the Hellenized East replaced traditional concerns with an obsession with personal luck, and the insuring of success and prosperity in the face of an utterly foreign and constantly changing society (Pollitt 1986: 2-4). In the civic arena, Tyche became a patroness of good fortune for the larger community; most Greek cities in the East were new foundations, surrounded by strange native populations and with uncertain futures. Tyche became both a personification of divine protection for the city and a comfortingly familiar Hellenic con-

3. The sources for Khirbat at-Tannūr are extensive; see e.g. Glueck 1952: 5-10; Glueck 1965: 108, 207, 284, 315, 338, 395-6, 398-400, 410-411, 449, pl. 45a, 45b, 46, 48, 53a, 55; Hammond 1973: 78-9; McKenzie 1988: 84, fig. 5a; Zayadine 1991: 57, pl. 54.

4. The bibliography for Tyche is too enormous to list

here. The most important works go back to the 19th century, see e.g. Drexler *et al.* 1886-90: col. 1503-58; Gardner 1888: 47-81; Allègre 1889; followed in the 20th century. by e.g. Strohm 1944; Dohrn 1960; Harrison 1960; Vermeule 1974; Calmeyer 1979: 347-65; Balty 1981: 840-51; Augè 1990: n. 1., to name but a few.

cept among the bizarre ideas of the locals. Thus R.R.R. Smith can observe that the "...Tyches were an admirable solution to the lack of particular, locally-based city gods in many of the new foundations in Asia" (Smith 1991: 76).

Visually, Tyche developed syncretistically, from the "personification" deities of the Classical Greek coin types. Eventually, her imagery comes to include aspects of archetypically female deities associated with fecundity and prosperity (like Cybele, Demeter, and Eirene; perhaps even Hera and Aphrodite, and the Roman Fortuna); Nike, the goddess of victory (a form of fortune, after all); potent and protective female figures such as Artemis and Athena (also Nemesis, Tyche's counterpart); tender images of "motherhood" such as the *kourophorai* of the end of the fourth century BC; and goddesses who personified the Greek ideals of civilization, the Muses (Pollitt 1986: 4; Ridgway 1990: 235. The attributes of Tyche then were derived from these origins: the mural crown, ears of wheat, a pomegranate or other fruit, a palm branch, a cornucopia or basket, a ship's rudder, a wheel, the zodiac, a spear, the victor's wreath, a *stephane* or *polos*, diadem, veil, an orb, a patera, a sceptre, a torch, wings, an accompanying river or harbor god, the baby Ploutos (Ridgway 1990: 235; Smith 1991: 76-7). With the flurry of new urban foundations after 300 BC, Tyche images began to proliferate in the Greek East, led by the famed Tyche for Seleukos I Nikator's city of Antiochia (Antioch) on the Orontes, sculpted by Eutychedes of Sikyon (Pausanias 6.2.6-7). The dynamic Lyssipan pose and tall mural crown of this figure set the standard followed by other city Tyches (Dohrn 1960; Balty 1981: 840-51; Pollitt

1986: 55; Ridgway 1990: 233-5; Smith 1991: 76-7), which either copied the Antioch model more or less wholesale (Dohrn 1960: 13-29), or adapted the Pheidian model of the High Classical standing goddess to include the visual language of the Eutychedes figure.

It is important to remember, however, that the idea of Tyche as city goddess and her visual representations in this role developed for the most part in the ancient Near East, and as a result of contact between Greek and native ideas. Gods and goddesses as patrons of specific cities, and guardians over their fortunes in the wider world, had already existed in the East for many centuries before the arrival of Alexander and the momentous changes of the Hellenistic age. It is interesting that influential Tyche figures appear first in Syria, Lebanon, and Turkey, where such traditions had important Iron Age origins; the possible role of the Syro-Phoenician "city goddess" in the ultimate development of Hellenistic Tyche has recently been explored (Calmeyer 1979: 347-65; as has the possible association of the goddess with the Semitic deity Gad, an important figure among the Palmyrenes (Février 1931: 38-47; Schlumberger 1951: 121-5; Sourdel 1952: 49-52; Fahd 1968: 78-84; Augé 1990: 131, 136, n. 2).⁵ In addition, there is the problem of Romanization, and the role of imperial art and iconography in the further development of Hellenistic types in provinces like Egypt, Arabia, and Judea, such as the Tyche of Caesarea Maritima (Hollum, Hohlfelder, Bull, and Raban 1988: 14, Fig. 3). It is in this environment that the Petra Tyche was created.

Origins

Because the Tyche head was not recovered from a secure archaeological con-

5. Recently, Brunhilde Ridgway has called for a reappraisal of the city Tyche: "The iconography of the city Tyche is in need of a new approach, which should start *not* from an attempt to recover the work by Eutychedes and the style of the Ly-

ssipan school but from a study of the personification within the context of the Syro-Phoenician towns and their traditions..." (Ridgway 1990: 243-5, n. 24).

text, it is impossible to assign an absolute date to the piece, or to pinpoint with which monuments the piece was associated. The rubble scarp where it was discovered clearly consists of debris from several areas of the region south of the Colonnaded Street, complicating any investigations regarding origins. However, on stylistic grounds, it is possible to *suggest* a connection with a group of monumental sculptures known from Petra since the middle of the century: the limestone and sandstone statuary fragments canonically assigned to the Temenos Gate.

One of the most famous freestanding structures in Petra, the Temenos Gate plays a key role in any examination of civic planning and chronology in the central valley.⁶ As do so many of the monuments of the city, the Gate combines Nabataean and Roman elements in a remarkably harmonious way (Lyttleton and Blagg 1990: 92-5, 98-9, 104-5). It is constructed of the local red sandstone and follows the proportions of Nabataean architecture, but is triple-arched and decorated on its east face with four detached columns, as were many Roman triumphal arches of the second and third centuries AD;⁷ four engaged columns decorate the west façade. Sockets in the door jamb suggest that a wooden gate sealed the great central arch; this gate when opened would afford a spectacular view of the sacred temenos and Qaṣr al-Bint beyond (Browning 1973: 146). Sculpted panels flank the main arch, and fragments of sculpture recovered

by Parr have been attributed to the decorative program of the arch as well (Parr 1957: 5-6; McKenzie 1988: 87; McKenzie 1990: 134). The Gate runs not perpendicular to the Colonnaded Street but at an oblique angle, suggesting that it was not built at the same time as the street (Parr 1960: 131-2; Browning 1973: 146). Marking the entrance to the sacred area of the Qaṣr al-Bint, this is one of the most important monuments of the Petra valley, and will figure prominently in our discussions below.

Four well-known sculptural fragments have been associated with the Temenos Gate through examination of the stratigraphy and destruction debris in the 1950s (Parr 1957: 5; Parr 1960: 130-2; McKenzie 1988: 87-8; McKenzie 1990: 133-4): the larger than life-sized bust of a god, perhaps Serapis, made of limestone and approximately one meter in height, in the Petra Museum (Parr 1957: 6-7, pl. 1-2; Glueck 1965: 467, pl. 151; McKenzie 1990: 134, pl. 58b-c); a "winged" head, perhaps of Hermes, of red sandstone approximately 52 cm in height, at the Petra Museum (Fig. 4) (Parr 1957: 7-8, pl. 3; Glueck McKenzie 1988: 87, Fig. 12a); a relief bust of Hermes (headless) with caduceus, made of sandstone and approximately 65 cm high (Parr 1957: 8, pl. 4b; Glueck 1965: 466, pl. 152b; McKenzie 1988: 87, Fig. 12c; McKenzie 1990: 134, pl. 59c); and the aforementioned relief figure of a winged Tyche, headless, holding a palm branch and cornucopia, bor-

6. For the most complete bibliography on the Temenos Gate, see McKenzie 1990: 132-4; it is presented in part here: Brünnow and Domaszewski 1904: 178-9, 314-5; Bachmann, Watzinger, and Wiegand 1921: 49-56; Parr 1960: 131-2; Kirkbride 1960: 117-22; Wright 1961: 124-35; Wright 1966: 404-19; Parr 1967-8: 7-8, 17; Starcky 1971: 83; Browning 1973: 97, 141-7, 217; Hammond 1973: 55; Lyttleton 1974: 23, 61, 63-6, 70-72, 270; Hadidi 1980: 108; Zayadine 1981: 353; Wenning 1987: 234-7, 264; McKenzie 1988: 87-8; McKenzie 1990: 36-7, 132-4.

7. See Parr 1957: 15; a date of before the middle of the second century AD has often been objected to on art historical grounds, since it was long assumed that detached columns in a triumphal arch – which appear on the east face of the Temenos Gate – are first known in Roman architecture from the arch of Septimius Severus. It has since been noted however that the lost Arch of Trajan most likely had such detached columns. Perhaps a triumphal arch associated with the emperor in the provinces would mirror his own arch in Rome (Browning 1973: 144-6).

dered by cavetto and fillet, of sandstone about one meter high, now at the Petra Museum (Parr 1957: 8, pl. 4a; McKenzie 1990: 134, pl. 59b). McKenzie has pointed out that this group of fragments shares several features and parallels other sculptures of the Temenos Gate: treatment of eyelids, iris, pupils, drapery, and, in the case of the winged Tyche, the use of the cavetto and fillet border, which can still be seen *in situ* on certain panels of the Gate (McKenzie 1988: 87, Fig. 12d; McKenzie 1990: 134). These same characteristics set this group apart from the so-called "1967 Group of Sculpture", limestone fragments recovered from the central Petra valley that McKenzie argues, convincingly, do not belong to the Temenos Gate (Wright 1967-8: 20-29; McKenzie 1988: 85-8, Figs. 10-11; McKenzie 1990: 134-5, pls. 60-66).

The head of Tyche recovered in the Brown excavations resembles the "winged head" of the Temenos Gate group more than any other monument in Petra (Fig. 4). While details of the eyes are lacking for Tyche, and the hair of the winged head is in tight curls, rather than waves as on the Tyche, points of overall composition and technique do compare favorably. Specifically, the oval shape of the Tyche's face, almost corpulent, with its soft, flowingly modelled curves and broad "double" chin, the deep-set eyes, and full, rounded lips turned down slightly at the corners, mirror – almost

exactly – features on the winged head. These parallels, as well as similarities in scale and material, suggest that perhaps the Tyche head is related in some way to the sculptures of the Temenos Gate group, or may be from the Gate itself.⁸

Without a secure archaeological context, the Tyche head can only be dated stylistically. On this basis, an approximate idea can be formulated, based on the formal similarities with the "winged head" as outlined above and parallels drawn by McKenzie between the development of sculpture at Petra and Khirbat at-Tannūr (Parr 1957: 6-8; McKenzie 1988: 87-8). The at-Tannūr chronology, as constructed by Glueck and corrected by Starcky and others (Glueck 1937a: 361-7; Glueck 1937c: 6-16; Glueck 1965: 73-99; Starcky 1968: 222-3), is broken into three phases; McKenzie suggests that the sculptures of the Temenos Gate parallel those of at-Tannūr-Period II, roughly dated to between the third quarter of the first century BC and the first quarter of the second century AD.⁹

This chronology, while broad, seems plausible if the Tyche head is indeed to be associated with the Temenos Gate, for this structure is alternately dated, based on an interpretation of stratigraphic and destruction debris evidence at both the Gate and the Colonnaded Street (which it directly overlies), as having a *terminus post quem* of either 9 BC or AD 76 (Parr 1960: 130-1; Parr 1970:

8. It is interesting that the Gate apparently was decorated with a relief and a bust of Hermes -- could a relief and a bust of Tyche complete this pattern? Note that both Hermes and Tyche are associated with wealth, prosperity (both civic and personal), and good fortune. Initially, it seemed that the head may belong to the headless Tyche body (McKenzie: correspondence); later examination suggested that the head was too big. More exploration needs to be done around the Temenos Gate area if the body of the Tyche head is to be found.

9. As suggested, for instance, in parallels between the winged head at Petra and the bust of Helios from at-Tannūr (Glueck 1965: 101-2, 138; McKenzie 1988: 82, 88-9). McKenzie demonstrates an "evolution" of forms at both sites from clas-

sicising models to more simplified sculpture (drapery changes from series of undulating folds to patterns of flat surfaces, treatment of hair becomes formal and repetitive, and a "distinctively Nabataean" type of eye develops), represented at at-Tannūr by the transition from Period I to Period II, and at Petra from the postulated chronological gap between the so-called "1967 Group of Sculptures" (earlier than the current Temenos Gate; see above) and the sculptures of the Temenos Gate (later than the 1967 Group; see below). It might be useful however to note Fawzi Zayadine's observation that the at-Tannūr sculptures have unique elements and "...constitute a distinctive category because they represent a local art..." (Zayadine 1991: 56).



4. Winged Head, Petra Museum (J.Basile).

366, 370; McKenzie 1988: 87-8; McKenzie 1990: 36-7, 132-4). The sculptures of the Gate would then postdate such monuments as the Qaşr al-Bint, the Colonnaded Street itself (obviously), and 1967 Group of Sculptures, thought to belong to a decorated structure or gate predating the extant Temenos Gate (McKenzie 1988: 86-8; McKenzie 1990: 35-7, 131-5). This would place the Tyche head, then, between 9 BC or AD 76 and approximately AD 125. It may thus be most prudent to say that the head of Tyche, if indeed it is related to the sculptures of the Temenos Gate, would date from the first century AD or the first quarter of the second century AD.

Conclusion

It must be admitted here that there is a significant element of speculation in these theories concerning the Tyche head, and since the piece was not recovered from a secure archaeological context it is possible that we may never be sure of its place among the monuments of Petra. The piece

could just as easily originate from the Lower Markets, the unexplored "small temple" south of the temenos of the Qaşr al-Bint, the Faroun ruins, or any number of places, rather than the Temenos Gate. More research is needed in the region south of the Colonnaded Street, on the disposition of spoils from archaeological sites in Petra, and generally on the problem of the Tyche imagery and its development in the Hellenized and Romanized Near East. Hopefully, however, the theories outlined above present one plausible solution to the problems of origin and chronology of the Petra Tyche, and will prompt further exploration.

Acknowledgements

The author wishes to acknowledge the assistance of the following individuals who aided in the writing of this article: first and foremost, Prof. Martha S. Joukowsky, who kindly allowed me to participate in the 1995 excavations at the Southern Temple, Petra, and contributed most of the maps and illustrations; also, Mr Artemis A.W. Joukowsky, Ms Erika Schluntz, Mr John Rucker, Mr Dakhlallah Qublan, and, as always, Ms Monica L. Sylvester. I would also like to thank the Jordanian Department of Antiquities and the staff of the Petra Museum, Prof. Jean Blackburn for her superb illustration of the Tyche head, and Drs Fawzi Zayadine and S. Thomas Parker, who read draft copies of the article. Finally, special thanks are due to Dr Judith McKenzie, who went over the piece with a fine-toothed comb and made many important observations and suggestions. Any errors or shortcomings contained in the article, however, belong solely to the author.

Joseph J. Basile
 Department of Art History
 Maryland Institute, College of Art
 1300 Mt. Royal Avenue
 Baltimore, MD 21217
 U.S.A.

Bibliography

- al-Tell, S.
1969 The New Archaeological Studies in Jordan. *ADAJ* 14: 29-37.
- Allègre, F.
1889. *Etude sur la déesse grecque Tyché, sa signification religieuse et morale, son culte et ses représentations figurées*. Paris.
- Augé, Chr.
1990 Sur la figure de Tyché en Nabatène et dans la province d'Arabie. Pp.131-146 in F. Zayadine. (ed.), *Petra and the Caravan Cities*, Amman.
- Bachmann, W. Watzinger, C. and Wiegand, T.
1921 *Petra*. Wissenschaftliche Veröffentlichungen des deutsch-türkischen Denkmalschutz-Kommandos, Heft 3. Leipzig.
- Balty, J. Ch.
1981 Tyche. Pp. 840-851 in *Lexicon Iconographicum Mythologiae Classicae*, Vol. 1. Zurich-Munich.
- Ben-Dur, S.
1948-9 Petra Colonia. *Berytus* 9: 41-43.
- Browning, I.
1973 *Petra*. Park Ridge (NJ).
- Brünnow, R.E. and von Domaszewski, A.
1904 *Die Provincia Arabia*. Vol. 1. Strassburg.
- Calmeyer, P.
1979 Fortune-Tyche-Khvarnah. *JDAI* 94: 347-365.
- Cornford, F.M.
1923 *Greek Religious Thought from Homer to the Age of Alexander*. New York.
- Deonna, W.
1940 Histoire d'un emblème: la couronne murale des villes et pays personnifiés. *Genava* 18: 119-236.
- Dohrn, T.
1960 *Die Tyche von Antiochia*. Berlin.
- Drexler, W. and Peter, R.
1886-90 Fortuna. Cols. 2074-2139 in W.H. Roscher (ed.), *Ausführliches Lexikon der griechischen und römischen Mythologie*, Bd. I 2. Leipzig.
- Fahd, T.
1968 *Le panthéon de l'Arabie centrale a la veille de l'Hégire*. Paris.
- Février, J.G.
1931 *La religion des Palmyréniens*. Paris.
- Gardner, P.
1888 Countries and Cities in Ancient Art. *JHS* 9: 47-81.
- Glueck, N.
1937a A Newly Discovered Nabataean Temple. *AJA* 41: 361-367.
1937c The Nabataean Temple of Khirbet et-Tannur. *BASOR* 67: 6-16.
1952 The Zodiac of Khirbet et-Tannur. *BASOR* 126: 5-10.
1965 *Deities and Dolphins: The Story of the Nabataeans*. New York.
- Hadidi, A.
1980 Nabatäische Architektur in Petra. *BJ* 180: 103-108.

- Hammond, P.
 1973 *The Nabataeans—Their History, Culture, and Archaeology. SIMA 37.* Gothenburg.
- Herzog-Hauser, G. and Ziegler, K.
 1943. Tyche. Cols. 1643-1696 in A. Pauly and G. Wissowa (eds), *Realencyclopädie der Klassischen Altertumswissenschaft*, Bd. VII A1. Stuttgart.
- Hinks, R.P.
 1939 *Myth and Allegory in Ancient Art.* London.
- Hollum, K., Hohlfelder, R., Bull, R. and Raban; A.
 1988 *King Herod's Dream: Caesarea on the Sea.* New York.
- Joukowsky, M.S.
 1994a Archaeological Survey of the Southern Temple at Petra, Jordan. *L'Orient Express* 2: 43-44.
 1994b Petra. The Southern Temple. *AJA* 98: 543-544.
 1994c The 1993 Archaeological Excavations and Survey of the Southern Temple at Petra, Jordan. *ADAJ* 38: 293-322.
 1995a Archaeological Survey of the Southern Temple at Petra. *SYRIA* 72/1-2:
 1995b Petra. The Southern Temple. *AJA* 99: 518-520.
 1995c Le 'Temple Sud' à Pétra. *Le monde de la Bible*, 94: 43.
 1996 Petra. The Southern Temple. *AJA* 100:
 1997 The Southern Temple at Petra. Pp. 306-307 in *Encyclopedia of Near Eastern Archaeology*. IV, Oxford /ASOR.
- Joukowsky, M. and Schluntz, E.
 1995. The Southern Temple at Petra: 1994 Excavations. *ADAJ* 39: 241-266.
- Khadija, M.
 1980 16 Jahre Feldarchäologie. in *Petra*. Pp. 204-211 in M. Lindner (ed.), *Petra und das Königreich der Nabatäer*, Munich.
- Kirkbride, D.
 1960 A Short Account of the Excavations at Petra in 1955-56. *ADAJ* 4-5: 117-122.
- Lindner, M.
 1985 *Petra; Der Führer durch die antike Stadt.* Fürth.
- Lyttleton, M.
 1974 *Baroque Architecture in Classical Antiquity.* London.
- Lyttleton, M. and Blagg, T.
 1990. Sculpture in Nabataean Petra, and the Question of Roman Influence. Pp. 91-107 in M. Henig (ed.), *Architecture and Architectural Sculpture in the Roman Empire.* Oxford University Committee for Archaeology, Monograph No. 29. Oxford.
- McKenzie, J.
 1988 The Development of Nabataean Sculpture at Petra and Khirbet Tannur. *PEQ*: 120:81-107.
 1990 *The Architecture of Petra.* British Academy Monographs in Archaeology, No. 1. Oxford.
- Meshorer, Y.
 1975 *Nabatean Coins. Qedem 3.* Jerusalem.
- Negev, A.
 1976 Die Nabatäer. *Antike Welt*, Supplements to vol. 7.
- Parr, P.
 1957 Recent Discoveries at Petra. *PEQ* 89:5-16.

- 1960 Excavations at Petra 1958-9. *PEQ* 92:124-135.
- 1967-8 Recent Discoveries in the Sanctuary of the Qasr Bint Far'un at Petra: Account of the Recent Excavations. *ADAJ* 12-13: 5-19.
- 1970 A Sequence of Pottery from Petra. Pp. 348-381 in J.A. Sandars (ed.), *Essays in Honor of Nelson Glueck*. New York.
- Patrich, J.
1990 *The Formation of Nabatean Art: Prohibition of a Graven Image Among the Nabateans*. Jerusalem.
- Piccirillo, M.
1986 *I mosaici di Giordania*. Rome.
- Pollitt, J.J.
1986 *Art in the Hellenistic Age*. Cambridge (UK).
1994 An Obsession with Fortune. Pp. 12-17 in S.Matheson (ed.), *An Obsession with Fortune: Tyche in Greek and Roman Art*, *Yale University Art Gallery Bulletin* New Haven.
- Ridgway, B.S.
1990 *Hellenistic Sculpture I. The Styles of ca. 331-200 BC*. Madison (WI).
- Savignac, R. and Horsfield, G.
1935 Le Temple de Ramm. *RB* 44: 245-278.
- Schlumberger, D.
1951 *La Palmyrène du Nord-Ouest*. Paris.
- Smith, R.R.R.
1991 *Hellenistic Sculpture: A Handbook*. London.
- Sourdél, D.
1952 *Les cultes du Hauran a l'époque romaine*. Paris.
- Starcky, J.
1968 Le temple nabatéen de Khirbet at- Tannur: à propos d'un livre récent. *RB* 75: 206-235.
1971 *La civilisation nabatéenne. 9e Congrès international d'Archéologie classique*. Paris.
- Strohm, H.
1944 *Tyche*. Stuttgart.
- Täubler, E.
1926 *Tyche. Historische Studien von Eugen Täubler*. Berlin.
- Vermeule, C.C.
1974 *The Goddess Roma in the Art of the Roman Empire*. Cambridge (MA).
- Waser, O. and Ruhl, In.
1916-24 Tyche. Col. 1309-1380 in W.H. Roscher (ed.) *Ausführliches Lexikon der griechischen und römischen Mythologie*, Bd. V. Leipzig.
- Wenning, R.
1987 *Die Nabatäer – Denkmäler und Geschichte*. Göttingen.
- Wright, G.R.H.
1961 Petra - The Arched Gate, 1959-60. *PEQ* 93:124-135.
1966 Structure et date de l'Arc monumental de Pétra. *RB* 73: 404-419.
1967-8 Recent Discoveries in the Sanctuary of the Qasr Bint Far'un at Petra: Some Aspects Concerning Architecture and Sculpture. *ADAJ* 12-13: 20-29.
- Zayadine, F.
1971 Fouilles classiques récentes en Jordanie. *AAAS* 21: 147-155.

- 1980 Die Felsarchitektur Petras. In M. Lindner (ed.), *Petra und das Königreich der Nabatäer*. Munich.
- 1981 Recent Excavations and Restorations of the Department of Antiquities (1979-80). *ADAJ* 25: 341-355.
- 1984 Al-'Uzza-Aphrodite. Pp. 167-169 in *Lexicon Iconographicum Mythologiae Classicae*, Vol. 2. Zurich-Munich.
- 1986 Tempel, Gräber, Töpferöfen. Pp. 214-272 in M. Lindner (ed.), *Petra: Neue Ausgrabungen und Entdeckungen*. Munich.
- 1987 Decorative Stucco at Petra and other Hellenistic Sites. Pp. 131-142 in *SHAJ* III. Amman: Department of Antiquities.
- 1991 Sculpture in Ancient Jordan. Pp. 31-61 in P. Bienkowski (ed.), *Treasures from an Ancient Land: The Art of Jordan*. Liverpool: National Museums and Galleries on Merseyside.