PRELIMINARY REPORT ON THE FOURTH SEASON OF THE 'AQABA-MA'AN ARCHAEOLOGICAL AND EPIGRAPHIC SURVEY, 1982/1983

by

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Introduction

The fourth season of the 'Aqaba-Ma'an Archaeological and Epigraphic Survey was completed during the period of December 1982 and February 1983.[1] This survey which is funded by the Research Grants Scheme of the Australian Department of Science and Technology was again conducted at the invitation of Dr. Adnan Hadidi, Director of the Department of Antiquities of the Hashemite Kingdom of Jordan and with the co-operation of Mrs. C.-M. Bennett, O.B.E., F.S.A., D. Litt., Director of the British Institute at Amman for Archaeology and History.

At the invitation of the Director General of Antiquities in Saudi Arabia, Dr. Abdullah Masri, and with the good offices of the Australian Ambassador in Saudi Arabia, His Excellency, Mr. Douglas Sturkey, the director of the survey was also able to spend ten days in Saudi Arabia to study and discuss comparable areas in the North West Hegaz and to use the valuable resources of the Riyadh museum.

Mr. Richard Morgan again assisted for a second season and was responsible for the photography and cartography of the survey. Inspector Nabil Baqa'in of Kerak was the representative of the Department of Antiquities of Jordan.

Mrs. C.-M. Bennett, O.B.E., F.S.A., D. Litt, spent six days in the field with the survey team and gave advice and guidance based on her twenty-five years of experience in the history, archaeology and antiquities of the Middle East. As Mrs. Bennett retires as Director of the British Institute at Amman for Archaeology and History this year it is appropriate that her personal interest in and support for this survey be acknowledged and grateful thanks be expressed for her friendship and many kindnesses.

Miss Geraldine King, Research Assistant of the Corpus of the Inscriptions of Jordan Project, Centre for Jordanian Studies, Yarmouk University, was also able to visit several of the more important epigraphy sites and kindly assisted and advised with the copying and interpretation of inscriptions. Mr. Michael Macdonald, Director of the Corpus of the Inscriptions of Jordan Project once more enthusiastically encouraged the survey and made available his expertise and extensive research and library resources.

The survey team was based this year at the Disi Agriculture project. Special thanks are expressed to the Minister for Agriculture and his colleagues for the use of the facilities at the Disi Agricultural Project.

During this season, the aim of the survey was firstly to further the work of identification of sites for the archaeological and epigraphic map and secondly to identify and record as many inscriptions and examples of Rock Art as time and weather conditions allowed. The following map shows the area explored which was 1,700 square kms. (Fig. 1).

Complementary to this map is the following list of sites (Table 1) which

[1] W. J. Jobling, Preliminary Report on the Archaeological Survey Between Ma'an and 'Aqaba, *ADAJ,* XXV, (1981) p. 105-112.
W. J. Jobling, Preliminary Report on the 'Aqaba-Ma'an Archaeological and Epigraphic Survey, Second Season, *ADAJ,* XXVI (1982).
W. J. Jobling, Preliminary Report on the 'Aqaba-Ma'an Archaeological and Epigraphic Survey, Third Season, *ADAJ,* XXVII (1983).

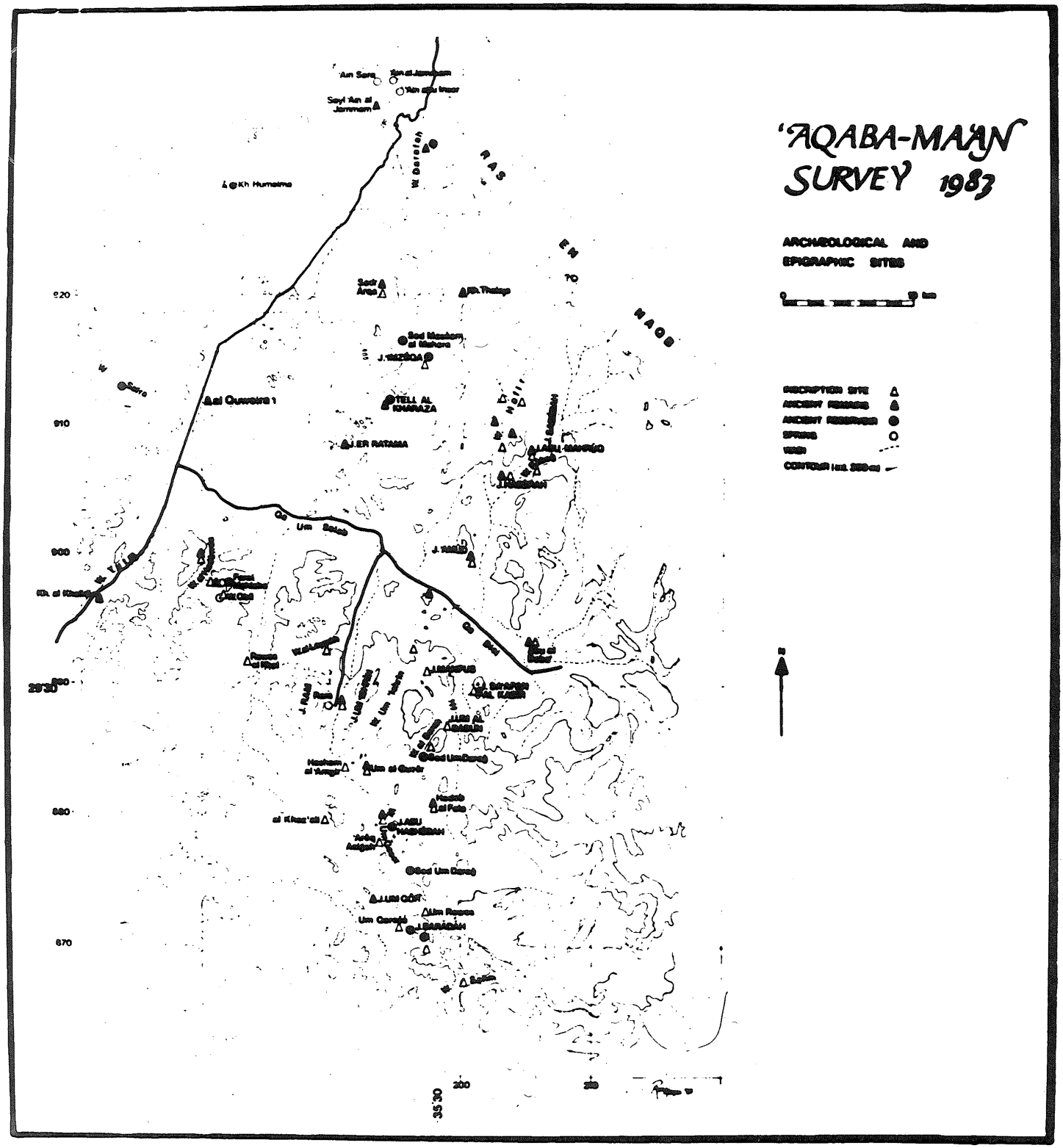

Fig. 1: Archaeological and Epigraphic Map of the 4th Season of the Aqaba-Ma'an Survey 1982-83.

comprise some of the place names and other cartographic, archaeological and epigraphic data from research conducted in the archives and library of the Registration Department of the Jordanian Department of Antiquities, the Fisher Library at Sydney University and the Australian War Memorial in Canberra.[2]

Table 1: Sites — 'Aqaba-Ma'an Survey Northern area

English name	*Grid Ref.*	*Antiquity*	*Inscription*	*Reservoir*	*Spring*	الاسم بالعربي
Marbat al Abyad	184922	x				مربات الابيض
Jebel 'Amud	201898	x	x			جبل عمود
Jebel Arqa	193917			x		جبل ارقه
Sadr Arqa	194922	x	x			سدر أرقة
Balkha	179927	x				بلخا
Al Batra	204933				x	البترا
Jebel Bethedeh	193924			x		جبل بثيده
Bir al Bitaiyihat	180909			x		بير البطيحات
Abu Al Daba'	206893	x	x			ابو الضبعه
Wadi Darafah	193933	x	x	x	x	وادى ظرافه
Bir al Fuweli	197936			x		بير الفولا
Jebel Um Ghadah	195905	x				جبل ام غاده
Jebel Habêrah	203906	x	x			جبل هبيره
Wadi Hafîr	205915	x	x			وادى حفير
Khirbet Humeima	180929	x		x		خربة حميمه
Jebel 'Imzêqa	197914		x	x		جبل امزقه
'Ain Abu Insor	195936				x	عين ابو نسور
'Ain al Jammam	195937				x	عين الجمام
Seyl 'Ain el Jammam	194935	x				سيل عين الجمام
Tell al Kharaza	194913	x		x		تل الخرزه
Jebel Abu Mahrûq	205907	x	x			جبل ابو مخروق
Al Manjir	192927	x				المنجير
Sed Masâam al Mahara	195917			x		سد مسام المهره
Rujm 'Ain al Qana	192937	x				رجم عين القناه
Bir al Qatar	203909			x		بير القطار
Al Quweirah	181913	x				القويره
Wadi Rabeg	204907		x			وادى رابغ

[2] (i) G. L. Harding, *Some Thamudic Inscriptions from The Hashemite Kingdom of the Jordan,* Leiden, 1952, p. 6.

(ii) Map References:
Ottoman Empire, 1:500,000, Ma'an Sheet, (1915).
Sinai Peninsular, 1:250,000 Sheet 4, Aqaba, (War Office 1915)
Transjordan, 1:1,000,000, (War Office 1915)
South Levant, 1:100,000, Series: Sheets:-
— NH36 R4 Um Sahm (1943)
— NH 36 R3 'Aqaba (1944)
— NH 36 R2 Batn El Ghul (1945)
Hashemite Kingdom of Jordan, 1:250,000 Sheet 3, Ma'an (1950)
Hashemite Kingdom of Jordan, 1:250,000 Archaeological, Sheet 3, Ma'an (1950).
Hashemite Kingdom of Jordan, 1:250,000 Series, Sheets:-
165/875 Wadi El Alureima (1967)
165/885Jebel Um Rakham (1957)
165/895 Wadi El Yutm (1957)
180/915 Wadi Hanut (1958)
180/925 Wadi El Gharid (1957)
195/915 Wadi Ghafir (1957)
195/925 Jebel El Batra (1957)
195/935 Jebel Tawil El Hamar (1952)
Jordan 1:50,000 Series, Sheets:
3049 I El Quweira (1974)
3049 II Jebel Um 'Ishrin (1974)
3149 IV Jibal El Batra (1974)
South Levant, 1:100,000 Sheet, NH 36 R I Makhfar El Quweira (1975)
Hashemite Kingdom of Jordan, 1:250,000 Archaelogical Sheet , Ma'an (1982).
'Aqaba-Ma'an Survey 1982 Map of Antiquities and Epigrapic Sites, *ADAJ,* XXVII (1983).

Wadi Rabēg	204906	x				وادى رابق
Al Rajfi	165912	x				الرجفه
Jebel er Ratama	191908	x				جبل الرتمه
Rûbêq	176923	x				ربيق
Wadi Safra	173914			x		وادى صفرا
‘Ain Sara	193936				x	عين صاره
Khirbet Thalaja	200920	x				خربة الثلاجة
Nab al Yammam	195936				x	ناب اليمام
Southern Area						
Aqaba	150882	x				العقبه
‘Areq Asigeh	194878		x			عريق السيجه
Jebel Um al Badûn	198888		x			جبل ام البدون
Wadi al Barah	197885		x			وادى البره
Jebel Baradah	197872		x	x		جبل برده
Sed Um Darag (al Barah)	197885			x		سد أم درج
Sed Um Darag (Meraq)	196876		x	x		سد ام درج
Dims Hagag	192890		x			دمس حجاج
Jebel Ettaqtaqiya	179901			x		جبل الطقطقيه
Hedêb al Fala	198881	x	x			هضيبة الفلا
Wadi Um Geser	194879		x	x		وادى ام جسر
Wadi al Hadûwda	180899	x	x			وادى الهدوده
Jebel Abu Hashêbah	195878			x		جبل ابو خشيبه
Hashem al ‘Amgir	192884		x			هشيم المقير
‘Ain al Hiwara	174895				x	عين الهواره
‘Ain al Hushim	180873				x	عين الهشيم
Wadi Um ‘Ishrin	196894		x			وادى ام شرين
Khirbet al Khalidi	172897	x				خربة الخليده
Tell al Khalifeh	150885	x				تل الخليفه
Khashim Mizmar	193894		x			خشم مزمار
Al Khaz’ali	191881	x	x			الخزعلي
Khirbet Kithara	163885	x				خربة كثاره
Wadi al Layyah	190893		x			وادى اللايه
Farat Mahlaba	182897	x	x	x	x	فارات محلبه
Makman al Jahaleen	191889	x	x			مكمن الجاهلين
Jebel Manfus	198891		x			جبل منفوس
‘Ain Mereifiq	189886				x	عين مريفق
Abu Nukheila	189886				x	ابو نخيله
Um Qaresa	194874	x	x			ام كراسغ
Ain al Qatar	189882				x	عين القطار
Wijn al Qatar	189882	x	x			وحن القطار
Wadi Qbil	183896		x		x	وادى قبل
Jebel Um Qôr	193873	x				جبل ام قور
Um al Quṣêr	195882	x	x			جبل ام قصير
Quṣêr Mudeifi	174900	x				قصير مضيفي
Ram	191887	x	x	x	x	رم
Bir Ram al ‘Atiq	188898	x				بير رم العتيق
Rakhimtein	180904	x				رخمتين
Rewes el Khel	183892		x			رويس الخيل
Um Rewes	197872		x			ام رويس
Risqeh		x				رزقه
‘Ain Rumman	188889				x	عين رومان
Gleyb Rumman	184896		x			قليب رومان

Wadi Rumman (Sed)	183895		x	x		وادى رومان
Jebel Sa'afan al Kabîr	202890	x	x			جبل سعفان الكبير
Jebel Sabêbah	205908		x			جبل سبيبه
Seyl Sabit	184869	x	x			سيل صابت
Wadi Saham	200867		x			وادى سحم
'Ain Sidd	190890	x			x	عين سد
Abu Silwan		x				ابو سلوان
Taraf al 'Imraq	190885		x			طراف المراق
Tereif Merar	190885	x				طريف مرار
Jebel Utud	184900		x			جبل اوتد
'Ain al Wejeihat	190890		x		x	عين الوجهات

(Note: The Grid References in this table are based on the Archaeological Map of the H.K. of Jordan 1:250,000 of 1982. Standardisation of English and Arabic names still remains a problem. English spellings from old maps have been retained for the present purposes.)

The cartographic details shown in this map include the sites discovered during the 1982-83 season of the 'Aqaba-Ma'an Archaeological and Epigraphic survey. The position of each site is given to the nearest kilometre with its name be it a *jebel, wadi* or local name. The key indicates the type of site. Geographical information has been limited to 300.00 m. contours, major *awdiyah* (wadis), sealed roads and important ancient and modern settlements.[3] A final series of maps consisting of the four seasons of the 'Aqaba-Ma'an survey is in preparation.

Some Aspects of the Geomorphology of the Area

Dominating the present desert floor towards the centre of the 'Aqaba-Ma'an survey are a series of *Qi'an* (basins) which were once *playas,* or ancient lakes, around which habitation situations occurred.[4] Thus around Jebel 'Amud there is considerable lithic evidence of such occupation both in rock shelters and extending out onto the edge of the *playa.* Together with the following observations about rainfall and regional economy it is pertinent that the geologically recent drainage system centred at Qa' Disi, Qa' 'Um Salab and Qa' Abu Qureishi which are the lowest points of the 'Aqaba-Ma'an area probably once had enough water to drain into the Wadi Yutm. The geological folding north of 'Aqaba through which the Wadi Yutm passes appears to have been the other drain operative under periods of greater rainfall.[5]

These observations combined with the evidence for a considerable range of fauna reported in ancient texts and reflected in the Rock Art of the area suggest the existence of conditions ecologically more favourable for human occupation from time to time.[6]

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[3] The key used is that of G. L. Harding, *op. cit.,* p. 6, with some minor modifications.

[4] R. U. Cooke and A. Warren, *Gemorphology in Deserts,* London, 1973, p. 215-218.

[5] G. Osborn and J. Matthew Duford, Geomorphological Processes in South Western Jordan, *PEQ,* January-June (1981) p. 5.

[6] R. Miller, Water use in Syria and Palestine from the Neolithic to the Bronze Age, *World Archaeology,* 11: 13 p. 331-334.

Rainfall and Regional Economy

During the past four years of the survey study has also been made of the rainfall and water resources of the 'Aqaba-Ma'an area, not least of all because of the crucial significance of the availability and use of water in man-land relationships in these semi-arid and desert environments in South West Asia and its exponential relationship to indigenous technology as well as the social and economic systems of dependent populations.[7]

Rainfall variations in the 'Aqaba-Ma'an area occur because of the nature of present prevailing desert conditions and the incongruous precipitation. As can be seen from the table of Mean Monthly Precipitation (Fig. 2) rainfall statistics show that precipitation across the 'Aqaba-Ma'an area varies from Ras en-Naqb escarpment to Wadi Ram.[8]

Topographic influence is also an important factor in these rainfall variations. Thus at higher altitudes there is greater and more frequent condensation especially from low cloud which is more prevalent in the winter months.[9] Under such conditions (as were observed during the last two seasons of the survey) the runoff from the slopes is immediate due to the lithology, (except in the instances of snowfall), and so the water percolates to the desert floor soaking the areas near the base of the slopes and contributing to erosion (Pl. XXXIX, 1). It is during, or as a result of, the runoff producing storms that it was observed that the saturation of the loose floor material caused the *awdiyah* (wadis) to flow for short periods of time. No less than four runoff producing storms were observed during January and February 1983.[10]

It seems reasonable to postulate that in times of greater rainfall in the past these *awdiyah* (wadis) would have drained into the ancient lake systems into the *Qi'an* (basins) mentioned above.[11]

Throughout the inselbergs runoff is captured by the joints and erosional features and it is significant that in many places this process has been modified and copied by man. This is particularly the case with the Nabataean dams and storage reservoirs (Pl. XXXIX, 2). However many such reservoirs have been abandoned and allowed to silt up. Thus there would appear to have been a decline in the demand for water.[12] Such evidence of hydrological technology as occurs throughout the 'Aqaba-Ma'an area would indicate that at times there was a density of population which may have been equated with higher water consumption. Also it was noted that more favourable climatic conditions would have been pre-empted by better rainfall which would have increased the water intake to aquifers which fed the sub-artesian wells and artesian springs as well as raised the levels of water tables. The location of ancient dams, reservoirs, cisterns and springs as well as the manifestations of the aquifer in the 'Aqaba-Ma'an area are primary factors in the location of antiquity sites, the determination of demographic concentration and frequently the explanation of the density of epigraphic remains.[13]

Rock Art and Petrographs

A fascinating addition to the corpus of Rock Art already recorded and copied in

[7] N. Roberts, Water Conservation in Ancient Arabia, *Proceedings of the Seminar for Arabian Studies,* 7 (1977) p. 143.; cf. W. Lancaster, *The Rwala Bedouin Today,* Cambridge, 1981, p. 9-10; and A. Musil, *Manners and Customs of the Rwala Bedouins,* American Geographical Society Oriental Exploration and Studies, No. 6, New York, 1928, p. 5-10, 13-19.

[8] Fig. 2 and rainfall observations have been prepared by R. V. H. Morgan, B.A., Dip. Museum Studs, (University of Sydney).

[9] M. Evenari, *et. al., The Negev, The Challenge of a Desert,* Cambridge, 1971, p. 32.

[10] J. W. Lloyd, The Hydrology of the Southern Desert of Jordan, (United Nations Development Programme/Food and Agricultural Organization of the United Nations: Investigations of the Sandstone Aquifers of East Jordan), Technical Report No. 1.

[11] G. Osborn and J. Matthew Duford, *op. cit.,* p. 3-5.

[12] J. Drayton, The Problem of Climatic Change in the Arabian Peninsula, *Proceedings of the Seiminar for Arabian Studies,* 5 (1975) p. 41; p. 45-46.

[13] N. Roberts, *op. cit.,* p. 134.

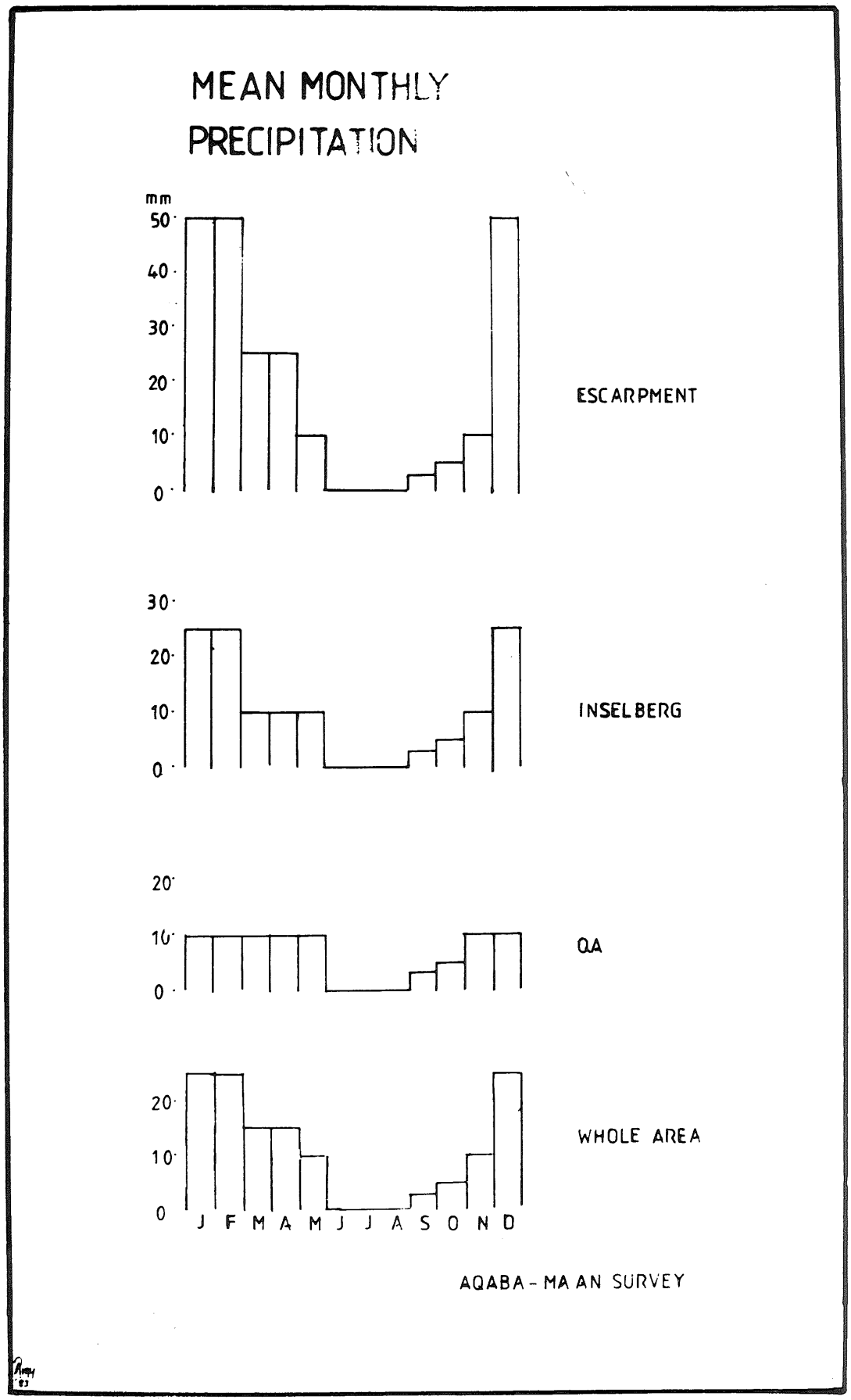

Fig. 2: Mean Monthly Percipitation of the Aqaba-Ma'an area.

the previous three seasons of the 'Aqaba-Ma'an survey has been the extensive range of detailed panels and individual examples of the area. From the highly stylised animal and human figures of the most exquisite execution to detailed action scenes which portray the co-ordinated hunting or warfare of the past inhabitants of these *awdiyah* (wadis), this art articulates visually a valuable range of human activty in, and response to this Southern Jordan evironment (Pl. XL, 1).

As in previous years, there has also occured a considerable number of scenes which seems to be combined with Thamudic inscriptions (Pl. XL, 2). Also identified and photographed in this season's survey were hunting and pastoral scenes which shed light on the fauna of this area and provide parallels with the Sinai, Southern Palestine and the Southwestern and Northwestern Provinces of Saudi Arabia.[14] Of particular interest in these scenes is the occurrence of what appears to be representations of the *Bos primigenius* which occurs in contexts which suggest that it was not domesticated (Pl. XLI, 1).[15] Other Animals of interest are the large cats and ostriches both of which occur in hunting scenes, usually as the object of the hunt and pursued by armed hunters assisted by dogs (Pls. XLI, 2; XLII,1). It may be possible to associate these hunting scenes with the lithic remains of the vicinity.[16] On the other hand, the combination of some of these scenes with Thamudic inscriptions may suggest that they are Thamudic art, although in some cases it would seem that the patina of the art work may indicate that some of the art scenes may be older in execution than the inscriptions which occur on the same rock face.[17]

In the Wadi Hafir there are both large and small panels of rock art which are concerned with what appear to be battle scenes. The frequency of such scenes and their style of execution suggest that this extensive Wadi, which also contains many Thamudic inscriptions, was either the scene of a severe and bloody battle, or the home of warriors who recorded their military exploits and exercises in the martial arts (Pls. XLII 2; XLIII, 1). The range of weapons included in these scenes are the single and double flexed bows, arrows, swords of different lengths, spears which vary in size and proportion according to whether they are used by infantry or mounted personnel, lassoes, clubs and a variety of shields.

At 'Areq 'Asigeh (GR 193879) more examples were found of pediography (foot symbolism) on the rock of the *Wadi* floor. These symbols are similar to those at Khaz 'Ali (GR 191881) and Sed Um Darag in the *Wadi* al Barah (GR 19885) (Pl. XLIII, 2). Mrs. Bennett has drawn attention to the occurrence of similar foot symbolism in the Petra region and similar motifs have been identified in Syria and North West Saudi Arabian rock art.[18]

Epigraphy

As in previous seasons considerable attention was given to the location and recording of North Arabian epigraphy. While the publication of the complete corpus of inscriptions from the 'Aqaba-Ma'an survey is still in preparation it is pertinent to note that in the 1982-83 survey there were several hundred Thamudic inscriptions located, recorded and photographed as well as two Lihyanite—Dedanite inscriptions which are being prepared for separate publication forthwith.

Of particular interest at this stage are the following Thamudic inscriptions some of which have been taken to the Kerak Museum.

[14] E. Anati, *Palestine Before the Hebrews,* London, 1963, p. 213; cf. J. Zarins *et al.,* The Second Preliminary Report on the South-western Province, *ATLAL,* 5 (1981) P. 34-37, Plates 32-41.; M. Ingraham *et. al.,* Preliminary Report on a Reconnaissance Survey of the Northwestern Province (with a note on a brief survey of the Northern Province), *ATLAL,* 5 (1981) P. 79, Plates 96 and 97; and, S. Helms, *Jawa: Lost City of the Black Desert,* London, 1981, p. 27ff.

[15] J. Zarins, *op. cit.,* p. 35; cf. S. Helms *idem.*

[16] J. Zarins *idem.*

[17] J. Zarins, *op. cit.,* p. 36; cf. G. Osborn and J. Matthew Duford, *op. cit.* p. 14-15.

[18] P. J. Parr, *et. al.,* Preliminary Survey in N.W. Arabia, 1968, *Bulletin of the Institute of Archaeology,* 10 (1972) Plate 23, No. 58.

Pl. XL, 2. Jebel 'Amud: Thamudic Inscription, (GR 201898), AM83/26B/17.

w šḥdd ktt
And *šḥdd* drew (it).

The name *šḥdd* occurs in Safaitic (see HIn.[19] p. 341). The verbal form *ktt* occurs in several inscriptions from this area (see *T.I.J.* Nos. 134, 251, etc.). This inscription provides a good example of the contrast in execution between the *ḥ* and *t* letters.

Pl. XLIV, 1. Jebel Manfus: Thamudic Inscription, (GR 198891), AM83/20B/18A.

'rq

The name *'rq* occurs in Safaitic (see HIn. p. 38.) The same name occurs higher up on the rock face where it is written next to a similarly executed drawing of a camel within a rectangular cartouche.

Pl. XLIV, 2. Wadi Hafir: Thamudic Inscription, (GR 204913), AM83/35B/6. Kerak Museum Registration No.

(1) *l zhwd bn lḥd*
By *zhwd* son of *lḥd.*

The name *zhwd* is new and may be derived from the root *zhw* (to increase, to thrive, see Lane p. 1264, col. 1), and *wd* (see HIn. p. 636). *wd* is a theophoric element (see BHT p. 98). The name *lḥd* occurs in Thamudic (see HIn. p. 511).

(2) *wasm šdh*

The name *šdh* is unknown and the root doesn't seem to appear in Classical Arabic. The signs appearing at the beginning of this inscription are probably a *wasm.*

(3) *f l r'lt*
And by r'lt

This is a difficult inscription to translate. The above translation is very tentative (see B.I.T.. p. 423 JS (Tham) 11, and p. 438 JS (Tham) 180). The *l*'s in this inscription are not consistent in execution and are read as uncertain. The name *r'lt* is not attested in North Arabian, however see *r'l* (HIn. p. 281 and Hava p. 258).

(4) *l ykbr*
By *ykbr*

The name *ykbr* occurs in Safaitic (see HIn. p. 681). The hammered line at the beginning of the inscription and the tailed circle by the side are probably *wasm.*

Pl. XLV, 1: Wadi Hafir: Thamudic Inscription, (GR 204913), AM83/35B/7. Kerak Museum No.

bn kmr
Son of *k*mr

The form *kmr* occurs as a name in Safaitic and Thamudic (see HIn. p. 228).

Pl. XLV, 2: Wadi Hafir: Thamudic Inscription, (GR 203909),

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[19] Abbreviations:

ARNA: F. V. Winnett and W. L. Reed, *Ancient Records from North Arabia,* Toronto, 1970.

B.D.B.: F. Brown, S. R. Driver and C. A. Briggs, *A Hebrew-English Lexicon of the Old Testament,* Oxford, 1968.

BHT: A. Vanden Branden, *Histoire de Thamoud,* Beyrouth, 1966.

BIT.: A. Van den Branden, *Les Inscriptions Thamoudéenes,* Louvain, 1950.

Dozy: R. Dozy, *Supplement aux Dictionnaires Arabes,* Leiden, 1967, Tome, II.

Hava: J. G. Hava, *Al-Faraid Arabic-English Dictionary,* Beirut, 1970.

HIn.: G. Lankester Harding, *An Index and Concordance of Pre-Islamic Arabian Names and Inscriptions,* Toronto, 1971.

Lane: E.W. Lane, *An Arabic-English Dictionary,* (8 Volumes), London, 1863-1893.

Moscati, *Comparative,:* S. Moscati (ed), *An Introduction to the Comparative Grammar of the Semitic Languages,* Weisbaden, 1969.

T.I.J.: G. Lankester Harding, with collaboration of E. Littman, *Some Thamudic Inscriptions From the Hashemite Kingdom of the Jordan,* Leiden, 1952.

AM83/30/8A. Kerak Museum No.

(1) *l krtn*
(2) *l 'wf*
(3) *l ʿtb*
(4) *l qnt*
(5) *mʿn*
(6) *l 'kbr*
(7) *l nšt*
(8) *šʿ*
(9) *bn ḥdḍ*
(10) *l mšš*

(1) *l krtn* By krtn

The name *krtn* is unknown. However for the root *krt* see Dozy, Supplement, II, p. 453. The form *'krtn* possibly occurs in Thamudic (see ARNA p. 134).It may be possible to relate the *krt* of this form to West Semitic *krt* (=to cut), the final nun being a nun energicum (see DISO. p. 127). There is a problematical grapheme above the *t*. It is possible that the writer started to write his father's name but there was not enough space for him to continue the *b* of *bn*.

(2) *l 'wf* By 'wf

The name *'wf* occurs in Safaitic (see HIn. p. 86). There are certain abrasions between the *w* and *f*.

(3) *l ʿtb* By *ʿtb*

The name *ʿtb* occurs in Thamudic and South Arabian (see HIn. p. 404). There is a hammered line which may concur with similar lines running down the left side of inscription four and below inscriptions six and seven. It doesn't appear to be in the same technique as the letters in this inscription.

(4) *l qnt* By *qnt*

The name *qnt* occurs frequently in Thamudic and Safaitic as well as South Arabian (see HIn. p. 489).

(5) *l mʿn* By *mʿn*

The name *m'n* is well attested in Safaitic, Thamudic and South Arabian (see HIn. p. 556). The *lam auctoris* has been damaged. The *n* occurs to the side of ʿ presumably because of the crack in the stone at this point.

(6) *l 'kbr* By 'kbr

The name *'kbr* occurs in Safaitic (see HI. p. 61).

(7) *l nšt* By *nšt*

So far the name *nšt* is unattested in North Arabian and the root unknown in Classical Arabic. However it is noted that the form *nšt* occurs in Hebrew (see B.D.B. p. 677). As mentioned above a hammered line appears below this inscription.

(8) *šʿ*

The name *šʿ* is frequently found in Safaitic (see HIn. p. 349). There is another hammered line above the *š* running along the crack on the edge of the rock.

(9) *bn ḥdḍ* Son of *ḥdḍ*

The name *ḥdḍ* is unattested in North Arabian. However it is suggsted that the final grapheme originally read *d* not *ḍ* (see Moscati *comparative.* p. 27-28, *et passim).* This would give the well attested name *ḥdd* (see HIn. p. 179). The alteration to the original grapheme *d* may be simply another hammer mark as those mentioned above. The abrasion following the last letter did not appear to be an *n* when studied in the field.

(10) *l mšš* By *mšš*

This inscription is damaged by hammering and the last two letters must remain uncertain. The names *mš* and *mš'l* occurs in Safaitic (see HIn. p. 546).

Pl. XLVI, 1. Wadi Sahm: Thamudic

Inscription, (GR 200867), AM83/40B/31. Kerak Museum No.

(l) ǧb't bn nty
By *ǧb't* son of *nty*

The small stone on which this inscription occurs was found in the Wadi Sahm. Unfortunately there is an obvious break at the beginning of the inscription. It is possible that the *lam auctoris* was written on the missing part of the stone. The name *ǧb'* occurs in Thamudic (see HIn. p. 152). The form *nty* is unknown as a name, however for the root see Hava p. 750.

These inscriptions and their tentative translation and interpretation reflect an important aspect of the antiquities of Southern Jordan in that they are the symbolization of one of the languages spoken by a large number of the inhabitants of this area during an important phase in pre-Islamic history. Along with Nabataean, the other widely attested language of this area, Thamudic reflects something of the mind of these people, their religion and their society.

Lithics

As in previous seasons there was extensive evidence of lithic industry within the area surveyed. While a detailed analysis and drawings of this new lithic evidence is being prepared for separate publication the flints from Jebel Um Qor (Pls. XLVI, 2; XLVII, 1), Wadi Um Ishrin (Pl. XLVII, 2), Jebel Sababah (Pl. XLVIII, 1), Wadi Hafir (Pl. XLVIII, 2), and Wadi Rabeq (Pl. XLIX) provide a profile of this lithic material. Situated both to the north and south of the *Qi'an* (basins) within the centre of this area these sites occur in the lee of rock overhangs where there is also evidence of circular and rectangular wall foundations. Such sites are usually situated close to present water supplies.

The selected examples of flints from these sites also serve as an indication of the quality of workmanship in the area. Good sources of flint, some obviously worked, occur at Seyl Jammam, in the Wadi Hafir and in the Wadi Rabeq below the Ras en-Naqb escarpment.

While more intensive analysis of this material still remains to be done it is perhaps permissable at this stage to relate this lithic material to the earlier observations made about climate and rainfall. Such a relationship suggests that the area under survey once had a density of population significantly larger in earlier periods of human occupation. This may relate to variation in climate and ecology and thus provide further evidence for a less arid environment.[20]

Summary

In the early part of the twentieth century areas such as those under survey were something of a *terra incognita* as far as western scholars were concerned. Early explorers were amazed at the sites located during their travels. Since then study of ancient traditions and the ancient geographers and historians, both Cassical and Islamic, has provided an impetus to explore and investigate further these early reports.This report and those that have preceded it are a contribution to this great and fascinating enterprise.

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[20] N. Groom, *Frankincense and Myrrh: A Study of the Arabian Incense Trade,* London, 1981, p. 217ff.

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