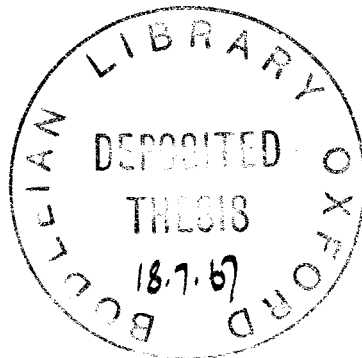


Thesis submitted to the Faculty of Oriental Studies  
for the degree of Doctor of Philosophy.

The Source, Distribution, History and Use of  
Lapis Lazuli in Western Asia from the earliest  
times to the end of the Seleucid era.

by

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Volume I - Text

August 1966. [1966]

## A B S T R A C T

This thesis is a study of the origin, use and distribution of lapis lazuli during three millennia of the history and pre-history of the ancient Near East. This attractive semi-precious stone was extensively used and, like many other stones, was invested with prophylactic powers. It was, therefore, the more coveted.

One of the principal reasons for the choice of lapis lazuli as a subject for examination was due to the belief that it originated from a unique source, namely the mines of Badakhshan in Afghanistan. The long-standing importance of lapis lazuli to the ancient Near East is shown by the early date of its original importation during the Late Ubaid period.

While all the evidence points to Badakhshan as the most probable origin, it has not been possible to substantiate this geologically by such methods as microscopic examination of samples and analysis of components, because no two pieces of the stone are exactly alike. Specimens collected at Badakhshan cover a wide range of colours from deep indigo to the palest blue, and many of these Badakhshan pieces can be matched by archaeological samples.

With Badakhshan established as the starting point of the lapis lazuli trade, the next problem was to investigate who required the stone and why. A combination of the archaeological and literary evidence has indicated the "pattern" of the use of lapis lazuli. We have established

that Gawra appeared to hold almost a monopoly from its initiation of the trade in the Late Ubaid period through the influx of Uruk people from the South in Gawra XI to the Late Uruk period of Gawra VIII, when the monopoly was seized from them by the South. When the organization of the lapis trade was in Southern hands there was not only a wider distribution of lapis lazuli within Mesopotamia itself, but also, during the Jemdat Nasr period, a considerable use of the stone for cylinder seals and beads. The lapis trade appeared to suffer a total eclipse in Early Dynastic I.

Lapis lazuli achieved its greatest popularity in Early Dynastic III when vast quantities of the stone were imported into Sumer to be used for a wide variety of purposes. A vivid record of the wealth of this period has been preserved in the magnificent 'royal' tombs and death pits of the Royal Cemetery at Ur, the numerous occupants of which were lavishly endowed with grave gifts of lapis lazuli. It is argued in this thesis that these 'royal' tombs belonged to a single period, that of Early Dynastic III, and that there is insufficient evidence to support the alternative theory that they originated in Early Dynastic II.

Even relying on the available evidence of the simple inhumations excavated to date, we have ample proof of the continued high popularity of lapis lazuli in the Akkadian period: but the state of trade during the period of Gutian anarchy is uncertain.

Lapis lazuli regained some of its former popularity

during the Sumerian renaissance under the Third Dynasty of Ur. During the centuries of weak Isin-Larsa rule, little lapis lazuli was used, but imports rose slightly in the Old Babylonian period. During these times lapis lazuli was principally favoured for the carving of cylinder seals bearing presentation scenes.

The Kassites acted as middlemen in the lapis trade: they imported large quantities of the stone and exported it to other lands, principally to Egypt in exchange for gold. Thereafter the popularity, and perhaps also the availability of lapis lazuli declined steadily.

It has been argued here that the most probable route along which the lapis lazuli was transported was the Northern route, i.e. that passing near the modern towns of Balkh, Nishapur, Tehran, Hamadan and Kermanshah. There is little evidence to suggest use of the geographically possible Southern route via Kabul, the Khyber pass, the Indus valley and up the Persian Gulf.

A further aim of this thesis has been the investigation of the significance which the stone possessed. Its principal attribute was that of purity.

This thesis is one of the few within the framework of Near Eastern archaeology to devote itself to the study of a material in all its aspects.

PREFACE

My greatest debt of gratitude is owed to Professor M.E.L. Mallowan, C.B.E., D.Lit., F.B.A., F.S.A., Fellow of All Souls College, who from the inception to the completion of this thesis has given me unfailing assistance and encouragement. Without his help and inspiration it could never have been undertaken.

To the Ministry of Education for granting me a State Studentship while doing this work, and to St. Hugh's College for providing me with a base in Oxford, I am also greatly indebted.

While it is impossible to list all those who have given generously of their time and knowledge, I would like especially to thank the following: Professor O.R. Gurney for guiding me in Assyriological studies and for obtaining from Dr. A.L. Oppenheim an invaluable list of textual references to lapis lazuli; Mr. Christopher Walker also provided much help with textual references; Miss Sewell, the Library Staff and many others in the Oriental Institute at Oxford, were extremely helpful; the late Professor L.R. Wager, F.G.S., gave much help in launching the expedition to Afghanistan and I am especially grateful to him for allowing Dr. Peter Woodrow to join the expedition as its

geologist - the latter's valuable work is clearly seen in many of the following pages; Mr. R. Holland of the same Department kindly cut and polished the stone samples seen on Plate 1; one of these was generously given by Mr. A.W. G. Kingsbury of the University Museum, while the Ur bead was provided by Dr. R.D. Barnett, Keeper of the Department of Western Asiatic Antiquities in the British Museum; Miss D. Collon of that Department kindly provided lists of lapis lazuli seals in the British Museum collection during the temporary closure of the Students Room.

At the Ashmolean Museum I received generous assistance from the Librarian and his staff, and Mr. Roger Moorey of the Department of Antiquities gave much valuable help. In London the Institute of Archaeology kindly put all its facilities at my disposal during two months early this year, and I am particularly grateful to Miss Barbara Parker for her great help in discussing the dating of the seals. Mrs. Conlon, the Institute's photographer, and Mr. F.E. Hardinges gave stalwart assistance in the compilation of the illustrations. In this connection I have also to thank Miss Charnian Lacey, A.R.I.B.A., for drawing several of the maps.

The expedition to Badakhshan was made possible by generous financial grants from the Near Eastern Archaeology

Fund, the British Institute of Persian Studies, the Royal Society, the Mount Everest Foundation, the Royal Geographical Society, the British Academy, and Shell and British Petroleum. Further help given in the planning and execution of this expedition is fully listed in the Report on it, but I would like once again to acknowledge the support of the Afghan Government, of Professor Daniel Schlumberger of the Délégation Française en Afghanistan, and, of course, of the members of the expedition.

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ABBREVIATIONS.

- A.A.A. Annals of Archaeology and Anthropology, Liverpool
- A.A.S.O.R. Annual of the American Schools of Oriental Research.
- A.f.O. Archiv für Orientforschung.
- A.J.A. American Journal of Archaeology.
- A.J.S.L. American Journal of Semitic Languages and Literatures.
- A.N.E.T. J.B. Pritchard, Ancient Near Eastern Texts relating to the Old Testament.
- A.O.B. Altorientalische Bibliothek.
- A.R.M.T. Archives Royales de Mari, Tome ...
- Ashmolean I B. Buchanan, Catalogue of Ancient Near Eastern Seals in the Ashmolean Museum, I, Cylinder Seals.
- C.A.D. The Assyrian Dictionary of the Oriental Institute of the University of Chicago.
- C.A.H. Cambridge Ancient History
- C.A.N.E.S.I E. Porada and B. Buchanan, Corpus of Ancient Near Eastern Seals in North American Collections, I, The Collection of the Pierpont Morgan Library.
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- HV Hilprecht H.V. Hilprecht, The Babylonian Expedition of  
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D Researches and Treatises, Vol. I.
- I.L.N. Illustrated London News.
- I.E.J. Israel Exploration Journal.
- J.A. Journal Asiatique.
- J.A.O.S. Journal of the American Oriental Society.
- J.C.S. Journal of Cuneiform Studies.
- J.N.E.S. Journal of Near Eastern Studies
- J.R.A.S. Journal of the Royal Asiatic Society.
- K.A.H. Keilschrifttexte aus Assur, historischen Inhalts.
- K.A.R. Keilschrifttexte aus Assur, religiösen Inhalts.
- K.B. Keilinschriftliche Bibliothek.
- Ibn Khurda-Ibn Khurdadhbeh, Kitab al-Masalik wa'l Mamalik,  
beh Bibliotheca Geographorum Arabicorum 6.
- Kleinfunde E. Heinrich, Kleinfunde aus den Archaischen  
Tempelschichten in Uruk.
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- P.B.S. Publication of the Babylonian Section, University Museum, University of Pennsylvania.
- Pliny, NH Pliny, Natural History.
- R.A. Revue d'Assyriologie
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- U.E. T. Ur Excavations, Texts.
- U.V.B. Vorläufiger Berichte über die von der Notgemeinschaft der Deutschen Wissenschaft in Uruk unternommenen Ausgrabungen.

- V.A.B. Vorderasiatische Bibliothek.  
W.O. Die Welt des Orients.  
W.V.D.O.G. Wissenschaftliche Veröffentlichungen der  
Deutschen Orientgesellschaft.  
Yakubi Ya'kubi, Les Pays.  
Z.A. Zeitschrift für Assyriologie.

## INTRODUCTION

This thesis is a study of the origin, use and distribution of lapis lazuli during three millennia of the history and pre-history of the ancient Near East. This attractive semi-precious stone was extensively used and, like many other stones, was invested with prophylactic powers. It was, therefore, the more coveted.

One of the principal reasons for the choice of lapis lazuli as a subject for examination was due to the belief that it originated from a unique source, namely the mines of Badakhshan in Afghanistan. If this hypothesis could be verified it would follow that as early as the Uruk period (c. 3,000 B.C.) trade was established between ancient Iraq and distant Afghanistan: no better proof could be furnished of the widespread scope of early trade and communications. It was therefore imperative that a visit should be made to the Badakhshan mines to inspect them and to collect samples. It was hoped that comparison of the Badakhshan samples with archaeological specimens would finally establish the authenticity of this source.

An expedition under the auspices of Oxford University and led by the author successfully travelled to the mines in 1964. While there the expedition's geologist, Dr. Peter Woodrow, undertook a thorough examination of the mineralogy and geology of the stone. The possibility of the use of other sources - principally that of Lake Baikal in Siberia--

was also investigated.

Having established the probable source of lapis lazuli for the ancient Near East, the next problem was to determine the periods of maximum and minimum use. For this there were two possible methods: one was to study the objects carved out of lapis lazuli, while the other was to investigate the texts mentioning the stone.

The archaeological evidence has had to be examined from two aspects: (i) the date of the archaeological and historical context, if any, of the object; and (ii) the date of the object itself. The provenance established the time when the object was finally abandoned, as a grave gift, as a foundation or other dedicatory deposit, or simply lost. As the stone had a high intrinsic value it was often preserved and re-used, and this terminal date might be several centuries later than the original carving of the object. A guide to the time of carving could, however, frequently be ascertained by stylistic criteria. Such criteria are best discerned in the intricate designs of cylinder and stamp seals, for beads are inclined to be poor dating material.

The linguistic evidence provided varied information. Historical texts often describe a certain king donating a piece of lapis lazuli to a temple or to another king, or record a business deal during the reign of a particular monarch. Through the collation of these scraps of evidence it has been possible to construct an historical framework

of the presence or absence of lapis lazuli. The texts also defined the sphere of the religious and ritual values of the stone.

The combination of the archaeological and literary framework enabled a 'pattern' of trade to be established and this in its turn led to a study of the routes the trade followed. At present there is only limited evidence of the earliest routes through Iran, for many sites still await discovery and excavation. It was therefore thought relevant to include a brief description of the well-documented Great Khurasan Highway of the early Arab geographers, which connected Baghdad with the distant lands of Trans-oxiana and eventually with China. Bearing in mind both the natural conservatism of the East and the physical features of the country, it is likely that the earliest routes followed a very similar course.

It finally remained to examine together the established pattern of trade and the probable routes against the background of such Iranian pre-history as is known, in order to determine whether the existing evidence provided an adequate basis for establishing the suggested routes and the fluctuation of supplies.

## CHAPTER ONE

### The Sources, Geology, Mineralogy, Properties, Uses and Imitations of Lapis Lazuli

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The semi-precious stone, lapis lazuli or lazurite, is easily recognized by its characteristic solid blue colour, which is often speckled with gold flecks, actually iron pyrites or "fool's gold". It is a comparatively rare stone, occurring at only about a dozen sites in the world. The principal deposits are located at Ovallé in the Chilean Andes, at Lake Baikal in Siberia and in the province of Badakhshan, Afghanistan.<sup>1</sup> Lesser deposits also occur in the Pamirs, California, Colorado and Burma.<sup>1</sup> Some geological textbooks have listed Iran among the producing countries, although they have failed to locate a specific source.<sup>1</sup>

Only four of these sources seem feasible as suppliers of lapis lazuli to the ancient Near East: Lake Baikal, the Pamirs, Badakhshan and Persia. Of these Badakhshan has long been considered to be the most likely.<sup>2</sup>

#### Lake Baikal

This source, situated at the Southern end of Lake Baikal in Eastern Siberia, is the most distant of the four from Mesopotamia. While it has not been found possible to obtain supplies of Baikal lapis from Russia, the University

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(1) Rutley, Elements of Mineralogy, pp. 380-381.

(2) V. Gordon Childe, New Light on the Most Ancient East, p. 65.

Museum, Oxford, has generously supplied material for comparative purposes, which is attributed to the Baikal source. These samples of Baikal lapis are of poor quality, heavily veined with white calcite, which is frequently tinged with a pinkish brown colour, see specimen on Plate 1, 1.

### The Pamirs

The occurrence of lapis lazuli in the Pamirs is recorded by a Russian academician, A.E. Fersman, who was a member of an expedition undertaken in 1930 to find:

"The lazurite, which legend said existed in the Pamirs. The expedition found the route exceedingly difficult and after reaching some 3,500 m. (11,400 feet) the party had to leave its horses and continue on foot along one of the rivers which had the name Liadjuar-Dara, which means 'River of Lazurite'. On reaching the height of 5,000 m. (16,500 feet) they found a great glacier field covered by immense stone falls from the adjacent steep wall of marble and gneiss. In this snow-white marble were veins and nests of lapis lazuli, some bright blue, some delicately blue with beautiful passages into violet and green tints. That the natives knew of this place was given credence when one of the guides said that he had heard of it from his father and that he, with others, had previously tried to reach the place but all had contracted mountain sickness and turned back." 1

### Badakhshan

The Badakhshan source itself is located some 1,500 miles from Mesopotamia in what is now an inhospitable country of bare mountain and deep ravine. This district may however once have been less barren, for Marco Polo describes very different scenery when he visited Badakhshan in 1273 on his

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(1) R. Webster, Gems: Their Sources, Descriptions and Identification, p. 201.

way to the court of the Khakhan at Peking:<sup>1</sup>

"Those mountains are so lofty that 'tis a hard day's work, from morning to evening, to get to the top of them. On getting up, you find an extensive plain, with great abundance of grass and trees, and copious springs of pure water running down through rocks and ravines."

He also notes that "There is also in the same country (Badakhshan) another mountain, in which azure is found; 'tis the finest in the world, and is got in a vein like silver".<sup>2</sup>

The part of Badakhshan containing the mines is known today as Kerano-Munjan. The river torrents of Kerano-Munjan have cut themselves deep canyons and gorges through the steep mountain ranges and vegetation is confined to small flat areas where sufficient soil still remains to support it. Most of the top-soil has long since been washed away. The few widely-separated settlements are linked by rocky trails, open for less than half the year. These trails are negotiable by horse or donkey, but not by camel. (Pl.5-6).

There are four mines in the Kerano-Munjan valley at altitudes ranging between 2,000 and 5,500 metres. They are situated at Chilmak, Shaga-Darra-i-Robat-i-Paskoran, Stromby, and Sar-i-Sang (see map 1 on Plate 49).<sup>3</sup> Of these four mines only that at Sar-i-Sang is being worked today. The nearest to Sar-i-Sang, Chilmak, lies only some three to four kilometres away but is hard of access, for it is sited some 500 metres above the valley bottom on a steep slope covered

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(1) Sir Henry Yule, The Book of Ser Marco Polo, Vol.I., p.158

(2) Ibid, p. 157.

(3) Eng. G. Ghaus, "Afghan Lapis Lazuli", Afghan Ministry of Mines and Industries Magazine, Vol.3, 1958, pp.1-6.

with loose rocks.

Sar-i-Sang, which means "place of stones", lies on the River Kokcha, some 35 miles south of Jurm and 2,350 metres above sea level (Plates 7-9). In the long narrow valley camelthorn and tamarisk find sufficient purchase on the stony ground, but little else grows there. All the supplies for the miners have to be carried to Sar-i-Sang from the tiny village of Azarat-Said (see map on Pl. 49) over twenty miles of precipitous trails, and all the lapis lazuli extracted from the mine has to be carried out along the same route, on donkeys.

The mines (see plan on Pl. 50 and Pls. 8-11) are situated 330 metres above the valley bottom on a steep mountain-side, and can only be reached by a long zig-zag path, which, like all the other paths in this area, has to be reconstructed each spring, after being swept away by the savage winter rains and snows. Mining can only be undertaken during the three months of summer, after the last year's snow has melted and before the next falls.

The workings consist of one old mine, now abandoned and closed, and two new tunnels, one of which is being driven right through the mountain. The stone is extracted by Afghan national servicemen, under the supervision of Russian mining engineers and geologists.

The Oxford University Expedition to Afghanistan visited Sar-i-Sang in 1964 to inspect the workings and collect samples of lapis lazuli. The disused old mine (see plan on

Pl. 51 and Pls. 12-13) was specially opened for them. It consists of a series of lofty caverns connected by narrow passages. The roofs and walls of these impressive caverns, in places 50 metres high, are covered by a thick deposit of black soot, proof, were it needed, of the ancient method of extracting the stone. This method was explained by Mr. Golboddin, the Afghan Chief of the Mine, and it agrees with that witnessed by Lieutenant Wood, who visited the mine in 1838.<sup>1</sup>

Camelthorn and tamarisk twigs were collected from the valley below and were carried up the steep path to the mine. When sufficient fuel had been collected, it was piled against the rock face and a fire was lit. When the rock was hot, cold water, which also had to be carried up the 330 metres ascent, was thrown onto it. The rock cracked and split, enabling further work to be done with the primitive tools available - pick, hammer and chisel - to extract the lapis lazuli from its marble matrix.

Russian and Afghan geologists have recently thoroughly studied the area and have determined the position of the veins of lapis lazuli. It is thought that most of the mountain range in which the mines are sited contains lapis lazuli. The ancient miners, however, understood little or nothing of this and could only hope to find the material by following seams of it, trusting that they would enlarge and not peter out. The lofty caverns of the old mine bear silent witness

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(1) Lt. John Wood, Journey to the Source of the River Oxus, p. 265.

to their industry. The labour needed to carve out tons of stone by these primitive methods must have been considerable.

When Dr. Peter Woodrow, a member of the Oxford University Expedition to Afghanistan, visited the Sar-i-Sang mines, he made a detailed examination of the geological formation of the stone, describing it as follows:<sup>1</sup>

"The rocks in the area of the mines comprise two metamorphic formations: banded marbles, in which the lapis lazuli occurs, overlying gneisses, also strongly banded. Taken over a wide area the contact between these two formations is horizontal, but in detail it is seen to be considerably folded. At Sar-i-Sang the marbles form the upper half of the mountain and the contact is folded into a syncline. The marbles are reported to be overlain by conglomerates and in the south, at the source of the Kokcha, the metamorphic rocks plunge under younger sandstones. The base of the gneiss formation is not seen.

The marbles and gneisses were examined in situ wherever accessible and an idea of rock types occurring in more distant parts was obtained from the loose blocks and boulders covering much of the area. The path up the mountain to the mouth of the old mine provided a good cross-section of the strata present. Where possible, particular attention was paid to the contact between the gneiss and marble formations. Until the specimens collected have been examined in detail it is not possible to do more than give descriptions of the rock types as seen in the field.

The gneiss throughout the area consists of biotite schist, in some places bearing small garnets, alternating with pegmatitic material. The pegmatite is usually present as continuous sheets parallel to the schistosity of the surrounding schist. It consists principally of feldspar with up to 10% of biotite. This biotite is generally much coarser than that of the schist and is usually aligned parallel to that in the neighbouring schist. The pegmatite often contains considerable amounts of tourmaline, sometimes intergrown with quartz, and another dark mineral, probably an amphibole. The relative proportions of schist and pegmatite vary from isolated very thin bands of feldspar in the schist through all the

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(1) Expedition report, pp. 5-6.

intermediate stages to bands of coarse pegmatite several feet thick, which sometimes contain relics of schist. In most places the bands of schist and pegmatite are straight and parallel. In others they are highly contorted and in extreme cases discordant veins of pegmatite are found.

The marbles vary considerably in colour and accessory minerals: different varieties occur in distinct bands, in places showing strong contortion. In addition to the lazurite in the lapis lazuli rock, there occur pyrites, phlogopite and amphiboles, together with several other minerals as yet unidentified. The lapis lazuli occurs in a thick, rather ill-defined band varying considerably in the concentration of lazurite in the rock. The number and amount of accessory minerals associated with the lazurite also vary and specimens of the different combinations have been collected.

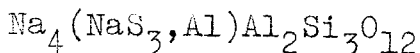
The contact between the gneiss and marble was investigated at three places. Similar relations were found at each: the contact is sharp; the rock for a few inches below the marble is rotten and either micaceous or psammitic; there is no sign of any alteration of the marble near the contact and no pegmatite intrusions were found in the marble.

Lapis lazuli has been described as formed by contact metasomatism at granite-limestone contacts. However, the picture at Sar-i-Sang is somewhat different as there is no intrusive granite mass in the neighbourhood and the pegmatite present in the gneiss does not cut the marble, suggesting that it is earlier in age. The occurrence of the lapis lazuli in one of the many bands in the marbles well away (approximately twenty feet) from the gneiss contact suggests that the materials required for its formation may have been deposited with the original limestone."

### Mineralogy of the Stone

Dr. Woodrow described the mineralogy of the stone as follows:<sup>1</sup>

"The essential component of the rock known as lapis lazuli, and that responsible for the blue colour, is the mineral lazurite, the chemical formula for which can be written:



(1) Expedition Report, pp. 4-5.

but there is probably much variation in the amounts of sodium and sulphur present. Investigations on the synthetic ultramarines, which appear to have the same structure as lazurite, show that the colour can vary from white, through green, to blue with varying amounts of these two elements. Lazurite may be isomorphous with the closely related minerals, hauyne and sodalite, with which it occurs in lapis lazuli. The highest grade lapis lazuli is pure lazurite, but most specimens of the rock contain several other minerals. The chief of these are calcite and iron pyrites, but amphiboles, pyroxenes and micas may also be present."

The Afghan Ministry of Mines and Industries, which directs the ancient mines at Badakhshan, recognizes only five commercial grades:<sup>1</sup>

1. A bright blue, without pyrites, flecks of different colour, marble, or other impurities. § 365 per kilo.
2. A slightly different colour with large flecks of varied blues, no pyrites, marble or other impurities. §240 per kilo.
3. A bright blue, with varied colours, a little pyrites, marble in a determined zone. § 160 per kilo.
4. A pale or bright blue, vari-coloured, with pyrites, and marble silicate but without black specks. § 85 per kilo.
5. Mixed blues with much pyrites but without black specks. § 60 per kilo.

The Oxford University Expedition to Afghanistan bought small pieces of each of the five grades. Without labelling it is hard to differentiate between the individual grades, though there is a considerable variation between Grades 1 and 5.

#### A Persian Source

Geological collections of precious and semi-precious stones often contain specimens of lapis lazuli which are

(1) Grades defined by Sayed Hachem Mirzad, President of the Geological Society of Afghanistan.

labelled as originating in Persia.<sup>1</sup> At the turn of the century when many of these geological collections were being formed, stones were usually bought from jewellers, rather than collected from their sources. Today lapis lazuli can still be readily purchased in Iran, but jewellers there will admit that the stone is imported from Afghanistan. It may be that it was the labelled samples which gave rise to the written record<sup>2</sup> that there was a source of lapis lazuli in Persia. Yet another possibility may be a loose definition of "Persia", for Persia has at many periods included large tracts of countries now outside her boundaries.<sup>3</sup> Again, there may have been a known occurrence in Persia at the time the stones were bought.<sup>4</sup> However, at the present time and in the immediate past no source of lapis lazuli is known in Iran. Members of the Geological Survey of Iran state categorically that they have heard of no occurrence of the stone. In recent times much of the country has been surveyed geologically to determine the location of oil deposits. This survey (see Map A in folder) was concerned primarily with mapping oil-bearing rocks rather than with the systematic recording of every type of rock, and the cartographers have only recorded the outlines of non-oil-bearing rocks without troubling to define them further.

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- (1) For instance, the University Museum, Oxford, and the British Museum (Natural History).
  - (2) Rutley, Elements of Mineralogy, p. 381.
  - (3) Sir Percy Sykes, A History of Persia I, pp. 5 and 12.
  - (4) J. de Morgan, "Découverte d'une Sépulture Achéménide à Suse", M.D.P. VIII, p. 53, note 2, refers to a supposed source in Kashan and another near Yazd.

In all known deposits, lapis lazuli occurs in non-oil-bearing metamorphosed limestones or marbles. In some cases granite is also present, but in others, for instance Badakhshan (see p. 10), no granite has been located in the immediate vicinity. It is possible, therefore, that there may be some lapis lazuli in Iran in one of these inadequately recorded zones of metamorphic rocks (see Map A) but it is impossible to determine this on present evidence.

While modern geologists deny the existence of lapis lazuli in Iran, there is sufficient literary evidence to suggest that the stone was once mined there. A number of references of the thirteenth and fourteenth centuries A.D. definitely claim a Persian provenance for lapis lazuli at that time, although commenting that it was of inferior quality to that from Badakhshan. The most definite and informative of these references is that made by Hamd-Allah Mustawfi of Qazvin. Mustawfi, the State Accountant of Sultan Abu Said (1316-1335 A.D.), who was the great-grandson of Hulagu Khan, definitely states that: "The best mines of this stone are in Badakhshan, but there are mines also in Mazandaran, and others at Dizmar in Azerbaijan, and there is also one in Kerman".<sup>1</sup>

According to the zones of metamorphic rocks mapped on the geological survey of Iran prepared by the National Iranian Oil Company (Map A), it is unlikely that lapis lazuli

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(1) Mustawfi of Qazvin, p. 197.

occurred in Mazandaran, for there are no metamorphics there.

Mustawfi's second location, that of Dizmar in Azerbaijan, is at least possible, for this area does consist of metamorphic rocks. Dizmar can be fairly precisely located by reference to the Arab geographers. The Castle of Dizmar, they state, stands on the bank of a tributary of the Araxes, which joined the main river from the South near the town of Urdubad.<sup>1</sup> Geologists working in the area have, however, seen no trace of lapis lazuli. It is of course possible that a small deposit of an inferior grade was known and perhaps worked out in the fourteenth century A.D.

Metamorphic rocks also occur in Mustawfi's third location, that of the province of Kerman. The Chinese traveller, Č'an Te, who was despatched in 1259 as the envoy of the Mongol emperor, Mangu, to his brother, Hulagu, records in his diary that lapis lazuli was found "on the rocks of the mountains in the South-Western countries of Persia".<sup>2</sup> Although there is no record today that lapis lazuli is found in this region, it is perhaps worth noting that there is a turquoise mine.<sup>3</sup> Perhaps there was some confusion between the two stones.

While there are no further literary references to the presence of lapis lazuli in Iran, a mining engineer, Mr. Hassan Ali Mostofi, is convinced that it occurs there.<sup>4</sup> He

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(1) G. le Strange, The Lands of the Eastern Caliphate, p.167.

(2) B. Laufer, Sino-Iranica, p. 520.

(3) O.M. Dalton, The Treasure of the Oxus, p. xx.

(4) Dr. Woodrow and the author visited Mr. Mostofi in Tehran in September 1964.

claims that there is, or was, an outcrop near Kashan - an area where a granite mass is surrounded by a zone of mineralization, in which lapis lazuli could have been formed. He supports this hypothesis by the following evidence: an old family of Kashan named Lajvardi, or lapis lazuli, do not today know why they are so called, but he suggests that they once purveyed the stone. They may either have worked it from his supposed Kashan mine, or may only have retailed it, having imported it from Afghanistan. He suggests that this lapis was ground up to colour the royal blue glazed tiles for which Kashan was famous but, in fact, lapis lazuli cannot be used for this purpose as it loses its colour when heated to a high temperature.<sup>1</sup>

The evidence for a mine of lapis lazuli in Persia is therefore inconclusive. But the State Accountant, Mustawfi, certainly should have known the assets of the empire of his master, Abu Said, and he not only claims that there were mines but comments on the stone produced, saying that it was of an inferior grade. It would seem therefore that lapis lazuli was worked in Iran, at least during the thirteenth and fourteenth centuries A.D., and was perhaps worked out at that time, for no memory of its continued existence lingers today. How much before Mustawfi this occurrence was known is debatable. It seems unlikely that it was exploited during the

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(1) See p. 24.

Achaemenian period for Darius the Great (522-486 B.C.) proudly claims that the lapis lazuli used in the construction of his palace at Susa came from Sogdiana,<sup>1</sup> an ancient province in Central Asia, which includes Badakhshan.

#### The Source used in Antiquity

Of the four possible sources of lapis lazuli in antiquity, two can perhaps be eliminated: the Pamirs on account of their great height (the lapis lazuli is located at a height of 16,500 feet) and remoteness; and Persia, where no mine has been certainly located. We are left, therefore, with Badakhshan and Lake Baikal. Of these two, Badakhshan is geographically the most likely as it lies only some 1,500 miles from Mesopotamia, about half the distance which separates Mesopotamia from Lake Baikal. The latter source cannot, however, be ruled out simply on account of its great distance from Mesopotamia, for as yet comparatively little is known of early trade and the impulses which directed it. There is an Early Dynastic II seal of lapis lazuli in the Ashmolean Museum, Oxford, which has been examined by Mr. Kingsbury of the University Museum, Oxford, and he claims that the material is identical with specimens from Lake Baikal.<sup>2</sup> Samples from Sar-i-Sang are, however, also closely comparable. If Mr. Kingsbury's hypothesis is correct, it would mean that as early as c. 2700 B.C. lapis lazuli was

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(1) R.G. Kent, Old Persian, p. 143, lines 37-38.

(2) Ashmolean I, p. 28 no. 133.

reaching ancient Sumer from Siberia and was being carried a distance of over 3,000 miles.

Samples of lapis lazuli from Sar-i-Sang, Badakhshan, collected by the Oxford University Expedition to Afghanistan, and from Lake Baikal, kindly donated by the University Museum, Oxford, were therefore examined by Dr. Woodrow in an attempt to discover some characteristic which could be used to distinguish the two sources. He carried out the following tests:

1. Thin sections of the Baikal and Badakhshan material were cut and examined under a microscope. The main minerals identified by Dr. Woodrow fell into two categories:

- (a) Those characteristic of metamorphosed impure dolomitic limestones:

Calcite	$\text{CaCO}_3$
Dolomite	$(\text{CaMg})\text{CO}_3$
Forsterite	$\text{MgSiO}_4$
Diopside	$\text{CaMgSi}_2\text{O}_6$
Phlogopite	$\text{KMg}_3\text{AlSi}_3\text{O}_{10}(\text{OH})_2$

- (b) Those produced by the introduction of sodium, sulphur and chlorine into the limestones:

Lazurite	$3\text{NaAlSiO}_4 \cdot \text{Na}_2\text{S}$
Pyrite	$\text{FeS}_2$
Scapolite	$3\text{NaAlSi}_3\text{O}_8 \cdot \text{NaCl}$
Feldspar	$\text{NaAlSi}_3\text{O}_8$

Other minerals occur in minor quantities.

English references to the work of the Russian geologist, D.S. Khorzinskü, on the lazurite deposits of Lake Baikal (together with the evidence of the thin sections) indicate that a similar set of minerals occurs at both localities. The problem of the origin of the sodium and sulphur in the deposits is being studied at present, particularly the possibility that they are of sedimentary rather than igneous origin.

Photographs (see Plate 3) were taken of the thin sections under the microscope and indicate some of the textures found.

2. The specimens were examined for the presence of trace elements, which might differ significantly between the two sources, by X-ray fluorescence. This method has the advantage of being non-destructive, but usually requires larger amounts of material than were available. The results were negative. It is planned to carry out tests on an electron probe micro-analyser, which analyses an area a few microns in diameter, when one becomes available either in Oxford or Manchester.
3. Several specimens were analysed by optical spectroscopy for the elements: vanadium, chromium, lanthanum, scandium, titanium, zirconium, gallium, nickel, zinc, cobalt, copper and manganese. The Afghan rocks gave a wide range of values for these and the specimen from Lake Baikal was also within this range. It was not possible, therefore, to distinguish between the two sources.

Although the two deposits of lapis lazuli appear to be similar in chemical and mineralogical composition, they may differ in age. Analysis of the phlogopite in the Afghan material has shown a high rubidium/strontium ratio in this mineral, which would make it suitable for radiometric age determination and it is hoped to attempt this.

Unfortunately, as stated above, it has not so far been possible to differentiate between the lapis lazuli from Badakhshan and that from Baikal by any mineralogical examination. A thin section cut from an Ur bead (Plate 4), generously supplied by the British Museum, does not unfortunately compare closely with the thin sections from either Badakhshan or Baikal (Plate 3). The method of radiometric age determination, outlined above, is also unlikely to apply to archaeological specimens as most do not contain much phlogopite, because the presence of this mineral makes the lapis

difficult to polish.

While mineralogical methods have not so far been able to solve this problem, one approach still remains - the appearance of the material to the naked eye. Specimens of lapis lazuli collected at Sar-i-Sang covered a wide range of colours from a deep almost violet blue through the royal blue of the gem quality to light blue, a turquoise and finally a few pieces of brilliant green (Plate 2). This green material has been identified as nosean, a mineral closely related to lazurite. The Baikal specimen given by the University Museum presents a very different appearance for it is heavily veined with a pinkish brown marble (Pl. 1, no. 1). A section of the Ur bead (Plate 1, no. 4) is very similar to a specimen from Sar-i-Sang (Pl. 1, no. 3). Again the pieces of lapis used to veneer the "Standard" of Ur show a range of colours (Pl. 22), all of which can be closely matched by the Sar-i-Sang samples.

As far as can be determined on present evidence, therefore, nearly all the examples of lapis lazuli used in antiquity have come from the Badakhshan source, although occasional pieces may have come from Lake Baikal.

#### Original Discovery of Lapis Lazuli

It is of interest to consider how the stone was originally discovered, for it first appears at Tepe Gawra in Mesopotamia as early as the Late Ubaid period (see p.37),

a time of increasing urbanization. While this advance in civilisation made it both possible and indeed essential to extend trading horizons, yet the discovery and transportation of the stone from a situation as remote and inaccessible as Sar-i-Sang to Mesopotamia appears to be a feat of some magnitude. Having visited the mines, the author is now able to understand how the stone could have been found in remote antiquity - possibly some time before expanding trade carried it to Mesopotamia.

Today the valley of Sar-i-Sang and the paths leading to it are littered with minute fragments of this attractive blue stone. They are easy to see and hard to resist pocketing. So easy to locate are the fragments that the writer found and collected a minute piece of poor quality lapis lazuli on the path near the top of the Anjuman Pass (see map on Pl. 49), despite the fact that she was not looking for, or even thinking of, the stone. How this piece reached the path is a mystery, as it was too poor in quality and small in size to have been carried there. The Anjuman Pass is a two to three day journey by horse from Sar-i-Sang. Similar small pieces were also noted on the path between Iskazr and Sharan.

Early man, while not finding the rich abundance of flakes that exist today, the result of millennia of intermittent mining, must nonetheless have had access to many

small pieces of the stone which had been washed down the mountainside from the veins above.

### The Properties and Uses of Lapis Lazuli

After its distinctive and brilliant blue colour, the most characteristic feature of the stone is its variability, caused by the presence of many impurities. Few pieces can be precisely matched and a wide range of colours, formed by varying quantities of the mineral hauyne or lazurite, can be observed in a single stone (Plate 1, no. 2).

The hardness of lapis lazuli, measured on Mohs' scale, is 6, while some of the impurities usually present have different hardnesses: for instance, calcite (Mohs' 3) and iron pyrites (Mohs' 6.5).<sup>1</sup> This makes fine engraving difficult, a fact noted by Pliny.<sup>2</sup>

Lapis lazuli is today best known for its use as a pigment in Renaissance Italy, where it was ground up and purified to form a deep true blue, known as ultramarine. This pigment was first used as late as the eleventh century A.D.<sup>3</sup> and was superceded in 1828 by an artificial product closely similar in chemical composition:<sup>4</sup> it is now impossible to buy the ultramarine made from the stone.

Ultramarine made from lapis lazuli has always been one of the costliest and most precious of painting materials,

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(1) G.F. Herbert-Smith, Gem-stones, p. 436-7.

(2) Pliny, N.H. XXXVII, xxxix, 120.

(3) R.J. Getters, Alumni XIX, pp. 342-357.

(4) R. Mayer, The Artists Handbook of Materials and Techniques, p. 70.

and early patrons often specified the use of this paint in a commissioned work, ultramarine being the only colour so singled out.<sup>1</sup> The blue paint is practically uniform in hue, and is entirely permanent for most uses. The original ultramarine gave rather a 'grainy' texture, which the modern artificial pigment does not. As ultramarine made from lapis is now unobtainable, the restoration of Renaissance paintings is difficult, and forgeries of works purporting to date from a period prior to 1828 and using ultramarine are therefore relatively easy to detect.<sup>2</sup>

The disadvantage of both the modern and the original ultramarine is that it is easily affected and bleached by very weak acids and acid vapours and it is therefore unsuitable for frescos.<sup>2</sup>

Prior to the discovery of ultramarine other materials were used to form blue pigments, some discussion of which is relevant here for, as we shall see below, the word for lapis lazuli was used indiscriminately to describe both the false and real stone, as well as blue dyes and pigments.

The first blue pigment used in antiquity was, as might be expected, a naturally occurring mineral, azurite, which is a beautiful deep blue basic copper carbonate. This

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(1) A letter from Berlingero Gessi to Don Cesare Leopardi d'Osimo, dated 10.vii,1647, reads: "The usual thing is to pay painters for the stretcher, the priming and for ultramarine". This is confirmed in other documents. Francis Haskell, Patrons and Painters, p. 13.

(2) R. Mayer, The Artist's Handbook, p. 82.

(3) See Chapter III, pp. 140-143.

material occurs at many copper deposits, for instance in Sinai, the eastern desert of Egypt, and, of course, Cyprus. As it is an oxidised product derived from the decomposition of copper sulphide, azurite always occurs at or near the surface and is therefore easily worked. It was principally used for fresco-painting. One of the earliest instances of its use was a Dynasty IV palette found at Medum.<sup>1</sup>

Another blue pigment used in antiquity, the one principally employed in Egypt, was that made from an artificial frit, formed by fusing lime and silica with copper as a colourant.<sup>2</sup> It often contained traces of calcite and quartz as impurities. This frit or "Egyptian blue" was also used to form beads, amulets and other small objects. To make these the frit was powdered, made into a paste, shaped, dried, and fired, thus forming a solid glassy mass. Beads occur as early as Dynasty IV, while frit cylinder seals are first found in Dynasty VI.<sup>3</sup>

Theophrastus refers to three kinds of blue pigments, all of which he calls kyanos:<sup>4</sup> one is artificial, made in Egypt, and identified as frit; another comes from Cyprus, and has been identified as azurite from the copper mines

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- (1) A. Lucas, Ancient Egyptian Materials and Industries, p. 340.
  - (2) H. Hodges, Artifacts, p. 157.
  - (3) A. Lucas, Ancient Egyptian Materials and Industries, pp. 340-344.
  - (4) E.R. Caley and J.F. Richards, Theophrastus on Stones, p. 136, text para. 55, and comment on p. 183.

Dioscorides<sup>1</sup> also mentions that kyanos came from these copper mines. A third type of kyanos comes from Scythia. Pliny, following Theophrastus, also refers to the same three kinds of kyanos, the Scythian, Cyprian and Egyptian.<sup>2</sup> He also uses the term to describe a blue jasper.<sup>3</sup>

Just as lapis lazuli was not used as a paint in antiquity, it was also unsuitable as a glaze colourant, for as well as losing colour by contact with weak acids, it is also adversely affected by the application of strong heat. The temperatures to which glazes have to be heated before they mature vary between 900° C. and 1,450° C.; most of the glazes in antiquity matured at well over 1,000° C.<sup>4</sup> When Dr. Woodrow heated ground-up lapis lazuli at 1,000° C. for only one hour it gave off a gas, probably sulphur, and lost all colour.

In ancient times, therefore, lapis lazuli was only used as a stone to be carved into different shapes and not as a colouring agent. It was carved into the following:

1. Cylinder and stamp seals (Pls. 25, 27-48)
2. Jewellery (Pls. 14-18, 48)
3. Amulets (Pls. 19, 20, 26)
4. Vessels (Pl. 21)
5. Whetstones (Pl. 21)
6. Dagger handles (Pl. 21) and axes
7. Inlay on mosaics, etc. (Pl. 22-24)
8. Plaques and tablets

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(1) Dioscorides Medicus, Book V, 106.

(2) Pliny, N.H. XXXIII, lvii, 161: XXXVII, xxxviii, 119.

(3) Ibid, XXXVII, xxxviii, 119.

(4) H. Hodges, Artifacts, p. 48-49.

1. Cylinder and Stamp seals (Pls. 25, 27-48)

Although Pliny states that lapis lazuli is "useless for engraving because cores like rock crystal interfere",<sup>1</sup> fine seals have been carved from this material. It has, however, to be admitted that some lapis seals are small and poorly carved. In these cases the engraver presumably failed to surmount the difficulties of his material. The earliest use of lapis lazuli for this purpose was in Late Ubaid times<sup>2</sup> - and the material was still being carved in Renaissance times.

As can be seen from the seal distribution chart in Appendix C, the popularity of lapis lazuli varied considerably from period to period. It was much in vogue in some of the earlier periods, such as Jemdat Nasr, and particularly Early Dynastic III and the Akkadian periods. It was often used for presentation scenes from the Third Dynasty of Ur to the Old Babylonian periods. After the Kassite period its popularity appears to have declined sharply, perhaps because imitations<sup>3</sup> were as effective in colour, cheaper to produce and easier to work. There are large numbers of frit seals during and after the second millennium.

According to the textual evidence,<sup>4</sup> there was an abundance of the stone in Kassite times, for those Babylonian

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(1) Pliny, N.H. XXXVII, xxxix, 120.

(2) See p. 37.

(3) See p. 34.

(4) See Chapter III, p. 156 ff.

kings were constantly sending large diplomatic gifts of lapis lazuli to the Egyptian court. Comparatively few seals of this material have, however, survived from this period and it may be that they were recut at a later date into beads.<sup>1</sup>

## 2. Jewellery (Pls. 14-18 and 48)

Lapis lazuli was a component of many types of jewellery throughout most periods. It was perhaps most skilfully employed by the craftsmen of Ur in Early Dynastic III in their imaginative production of delicate jewellery. Confining themselves principally to using three materials - a rich red gold, carnelian and lapis lazuli - they created masterpieces of beauty and grace: intricate 'wreaths', solid 'dog-collars', massive necklaces, big boat-shaped ear-rings and variegated hair ornaments (Pl. 14). Most of the ornaments relied simply on the material being cut to the requisite shapes: for the 'wreaths' long thin tubes of lapis lazuli (Pl. 15), for the 'dog-collars', fluted triangles and for the many necklaces, beads of a wide variety of shapes from round fluted balls to elegant double conoids (Pls. 15 to 17).<sup>2</sup>

In other cases, small thin pieces of lapis lazuli were cut and laid within gold 'cloisons' to form pendants of great delicacy and beauty (Pl. 16). This same method of inlaying tiny pieces of lapis lazuli was used on the hair 'combs'

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(1) See p. 28.

(2) U.E. II, p. 366 f. and Plate 128 f.

where three graceful flowers of lapis, carnelian and shell spring from a single gold or silver stalk. (Pl. 14).<sup>1</sup> Cloisonné work is also employed on gold rings for the fingers.<sup>2</sup>

The earliest example of lapis lazuli set into a gold mount occurred at Tepe Sialk,<sup>3</sup> where it was found in Period IV, a period contemporary with Jemdat Nasr. As might be expected the workmanship is cruder than that found at Ur some centuries later.

Many texts describe the rich jewellery given to the deities, very little of which has survived. For instance, the goddess Ningal of Qatna was said to have been equipped with a huge quantity of fine jewels, nearly all of which were inlaid with lapis lazuli.<sup>4</sup>

The technique of setting lapis lazuli into gold cloisons was still popular in the late Achaemenian period, as was proved by a hoard of intricately worked jewellery found at Susa (Pl. 48).<sup>5</sup> Here the craftsman has relied on the subtle colour contrast between lapis lazuli and turquoise, rather than lapis and carnelian as at Ur. This combination also occurred in other beads from an Achaemenian treasure

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(1) U.E. II, Pl. 136.

(2) Ibid, U.9778, Pl. 138.

(3) Sialk I, pp. 69-71, Pl. XXX.

(4) See Chapter III, p. 160.

(5) J. de Morgan, "Découverte d'une Sépulture Achéménide à Suse", M.D.P. VIII, pp. 43 - 58.

found at Pasargadae. Here tiny alternating segments of lapis and turquoise were set into thin gold walls.<sup>1</sup> This Pasargadae treasure showed another way of using a bead of lapis lazuli, which was to enclose it in a cage of gold mesh and so to suspend it from an ear-ring.<sup>2</sup>

Beads of lapis lazuli were worked in many different forms throughout nearly all periods and, indeed, the stone was at times in such short supply that old lapis seals and tablets were recut into new bead-shapes. In some Parthian houses at Nippur some lapis tablets of the Kassite period were found which were clearly being used for cutting down.<sup>3</sup> It has been suggested that the cache of lapis seals found at Thebes had been sent there as lapis lazuli for recutting rather than as actual seals.<sup>4</sup>

### 3. Amulets (Pl. 19-20)

Lapis lazuli was relatively popular for the carving of tiny amulets, which were often used as beads or pendants. At Ur it was sculpted into such creatures as frogs, fish, flies, calves, bulls, rams and ibex (Pl. 19).<sup>5</sup> At Mari a number of lapis amulets were found: a double-headed bull protome, a seated bull, an eagle and a couple of (?) frogs (Pl. 19).<sup>6</sup> Van Buren, in her essay on the fauna of Mesopotamia, recorded lapis monkeys, tortoises and beetles.<sup>7</sup>

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- (1) D.B. Stronach, Iran III, Pl. XIV g, p. 35, nos. 28-9.
  - (2) Ibid, Pl. XI a.
  - (3) H.V. Hilprecht, B.E. I, Series D, pp. 335-6.
  - (4) See Chapter II, p. 120.
  - (5) U.E. II, Pl. 142.
  - (6) A. Parrot, M.A.M. I, pp. 158-160.
  - (7) E.D. Van Buren, The Fauna of Ancient Mesopotamia, pp. 22, 103 and 112.

while in Achaemenian Persia such creatures as lapis lions<sup>1</sup> and doves<sup>2</sup> (Pl. 48, 5) have been noted. It is interesting to observe the delicacy of the carving of some of the pieces, particularly those from Ur, whose craftsmen were highly skilled; their achievements give the lie to Pliny's comments on the unsuitability of lapis for fine work.

#### 4. Vessels (Pl. 21, 1)

One of the very few extant examples of an early lapis lazuli vessel came from the tomb of Queen Pu'abi (formerly Shub'ad). This is a spouted cup, U.10517, some 7 cms. high.<sup>3</sup> Another lapis vessel, this time in the form of a "tray" was found in the Treasury at Persepolis.<sup>4</sup> Unfortunately neither photographs nor measurements were given.

While few vessels remain today, there are many references to them in the texts, for instance in hymns<sup>5</sup> and in the Gilgamesh epic when he mourns the death of Enkidu by filling with honey a bowl of carnelian, and with curds a bowl of lapis lazuli.<sup>6</sup>

#### 5. Whetstones (Pl. 21, 2)

Meskalamshar, PG 755, was equipped with a whetstone of lapis lazuli,<sup>7</sup> as also was the driver of the chariot in the

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(1) D.B. Stronach, Iran III, Pl. XII d.

(2) M.D.P. VIII, p. 55, fig. 87.

(3) U.E. II, Pl. 174.

(4) E.F. Schmidt, Persepolis II, pp. 90-91.

(5) A. Falkenstein & W. von Soden, Sumerische und Akkadische Hymnen und Gebete, p. 143.

(6) A.N.E.T. p. 88.

(7) U.E. II, U.10015, Pl. 155.

King's Grave, PG 789, at Ur.<sup>1</sup> They measured some 11 cm. in length and were suspended from a gold ring. Only princes could have afforded the luxury of a lapis lazuli whetstone, which must have been principally reserved for ceremonial occasions. With a hardness of 6 on Mohs' scale, however, lapis lazuli was one of the tougher stones used in antiquity and would actually have been hard enough to sharpen weapons of copper and bronze.

6. Dagger handles (Pl. 21, 3) and axes

The hilt of the famous dagger, U.9361, was carved from a single piece of the stone and then studded with gold.<sup>2</sup> It was more frequent, however, for gold pommels and guards to be studded with lapis.<sup>3</sup> In the "Dorak treasure"<sup>4</sup> one of the daggers has a lapis pommel above a gold hilt which was further embellished with lapis dolphins.<sup>5</sup> From the same treasure came a ceremonial axe of the blue stone.<sup>6</sup> The Kassite kings economised on their ceremonial axes for they made them of "Egyptian blue" and described them as being made of lapis lazuli!<sup>7</sup>

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(1) U.E. II, U.10552, Pl. 174.

(2) Ibid, Pl. 151.

(3) Ibid, p. 83, U.10427.

(4) J. Mellaart, "The Royal Treasure of Dorak", I.L.N. of November 28, 1959. The Dorak treasure has not yet been fully authenticated and there is controversy about its date, which most authorities would be prepared to attribute to the end of the Early Bronze Age, a period at which, as we will see, lapis lazuli was abundant in Mesopotamia.

(5) Ibid, Fig. 18 E.

(6) Ibid, Fig. 11.

(7) H.V. Hilprecht, B.E.I/1, Series A, p. 52, nos. 75, 78-9.

## 7. Inlay (Pls. 22-24)

One of the most popular methods of employing lapis lazuli was as an inlay. These small flat pieces were doubtless a particularly economical way of using the stone for it is formed in definite strata, which can easily be split lengthwise. Lapis inlay, set in bitumen, was applied in many shapes and sizes to a wide variety of objects, ranging from large boxes to small pieces of jewellery. The most famous example of lapis lazuli used in this way is on the sides of the "Standard" of Ur.<sup>1</sup> This "Standard" may well in fact be a lyre-box, for it is shaped like the other lyres found at Ur. There is no other instance of a "standard". On this object, the lapis lazuli pieces form a blue background to the shell pictures. Small segments of carnelian used in the borders add an additional touch of colour. (Plate 22)

Lapis mosaic inlay was applied in the Royal Cemetery to a wide range of objects, as well as to most of the other lyres. It was used on gaming pieces and boards (Pl. 23, 3),<sup>2</sup> on toilet and wardrobe boxes,<sup>3</sup> on 'bottle tops',<sup>4</sup> on ostrich shell bowls<sup>5</sup> and on sceptres.<sup>6</sup> At Mari it was stuck into pottery bowls.

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- (1) U.E. II, U.11164, Pl. 91 ff.
  - (2) Ibid, Pl. 96-8.
  - (3) Ibid, Pl. 103.
  - (4) Ibid, U.10988, Pl. 103.
  - (5) Ibid, U.9255, Pl. 156.
  - (6) Ibid, U.12442, Pl. 153.
  - (7) A. Parrot, M.A.M. I, p. 28, Pl. LXXI.

Pieces of lapis were also applied to larger sculptures. It very often represented the pupils of a statue's eyes and also sometimes the eyebrows.<sup>1</sup> It commonly represented the horns and beards of animals and the beards of humans. A lapis lazuli beard must have had some special religious significance which we no longer understand. This custom of making beards of lapis, or a substitute such as blue composition, was still current two millennia later both in Babylon and in Achaemenian Persepolis, where pieces of beard-shaped inlay have been found.<sup>2</sup>

In the epics of the Early Dynastic era, a time regarded by later dwellers in the land of ancient Sumer as a Golden Age of heroism, the hero Agga is described as wearing a lapis beard.<sup>3</sup> And Enmerkar, in the epic Enmerkar and the Lord of Aratta, is described as "the dedicated one who wears a long beard of lapis lazuli!"<sup>4</sup>

The famous "Ram in a Thicket" (Pl. 23)<sup>5</sup> has not only horns, fringe, beard, eyes and eye-rims of lapis, but also part of his fleece is made of overlapping sections of the blue stone.

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- (1) For instance at Khafajah, H. Frankfort, Sculpture of the Third Millennium B.C. from Tell Asmar and Khafajah, Pls. 11-12, 54-55, 82, 85 and 104: at Mari, A. Parrot, M.A.M. I, Pl. XXVII, statue of Ebih-il, and Pl. XXXVI, statue of 'femme au polos': at Ur, U.E. II, Pls. 107, 110, 114, 116 etc.: at Babylon, R. Koldewey, W.V.D.O.G. 15, p. 47, Pl. 9, 78.
  - (2) R. Koldewey, W.V.D.O.G. 15, Pl. 9, 79: E.F. Schmidt, Persepolis I, pp. 186, 209 and 263; and Persepolis II, p. 71.
  - (3) A.F.E.T. p. 4C.
  - (4) S.N. Kramer, Enmerkar & the Lord of Aratta, p. 39.
  - (5) U.E. II, Pl. 87, U.12357A.

Fragments of lapis were occasionally set into some of the 'cloisonné' ivories, found in such Assyrian cities as Nimrud, ancient Calah.<sup>1</sup> (Pl. 24) Frit was however more commonly employed for the purpose there.

The technique of inlaying lapis began as early as the Jemdat Nasr period<sup>2</sup> and was still being followed three millennia later by the Achaemenians.<sup>2</sup> The art of incrustation and inlay is one that has always appealed to Middle Eastern tastes and to the skill of Middle Eastern craftsmen who found in lapis lazuli one of the most satisfactory components for this kind of work.

#### 8. Plaques and Tablets

Plaques and tablets of a dedicatory nature were sometimes made of lapis lazuli. Not many of these have, however, survived, for in later times they were often cut down into beads. A large cache of such dedicatory tablets and discs was found in Parthian houses at Nippur, where, as has already been mentioned above (p. 28), they were about to be cut down.<sup>3</sup> They belonged originally to the Kassite period.<sup>3</sup>

Other lapis lazuli tablets, buried in foundation deposits, have been found at Mari.<sup>4</sup>

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(1) M.E.L. Mallowan, Nimrud and its Remains, Vol. I, frontispiece.

(2) See p. 27.

(3) H.V. Hilprecht, B.E. I/1, Series A, p. 49, nos. 28, 30, 32, 36; p. 50, nos. 41, 42, 45, 46, etc.

(4) A. Parrot, M.A.M. I, p. 52 ff.

## Imitations of Lapis Lazuli

As is pointed out below, the same word was used in Sumerian and Akkadian to describe lapis lazuli and its many substitutes. A description of some of these is therefore relevant.

Lapis lazuli was rare and costly in antiquity and was prized by the Egyptians more than any other semi-precious stone.<sup>1</sup> The Egyptians were, therefore, the first to imitate it, for the supply of the stone over the long route from Badakhshan never kept up with demand. Their two principal substitutes were "Egyptian blue" or frit<sup>2</sup> and "Egyptian faience".

"Egyptian blue"<sup>2</sup> was used for small objects, such as beads, amulets and seals. It was also often used as inlay in 'cloisonné' work. "Egyptian faience"<sup>3</sup> was perhaps the most effective substitute for lapis lazuli. It was extensively used for amulets, scarabs, beads, inlay, statuettes, bowls, chalices and tiles. It was particularly popular during the Middle Kingdom, when it spread all over the Near East.

"Egyptian faience" consists of a core of granular quartz, tinted blue and coated with a separate alkaline glaze. The

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- (1) J.R. Harris, Lexicographical Studies in Ancient Egyptian Minerals, p. 126.
  - (2) For the composition of "Egyptian blue" and its use as a pigment, see p. 23.
  - (3) A. Lucas, Ancient Egyptian Materials and Industries, pp. 156-164. "Egyptian faience" should not be confused with "faience", a term reserved for maiolica, or delftware.

core was generally moulded into shape: if a large object in two or more sections. Vases were thrown on the potters' wheel or moulded by hand.

In recent times the most effective imitation of lapis lazuli, known as "German", "Swiss" or "false" lapis, is jasper stained blue.<sup>1</sup> The Germans also imitate lapis with sintered synthetic blue spinel.<sup>2</sup> Today, therefore, substitutes have largely replaced lapis lazuli on the European market and the real stone is hard to obtain.

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(1) G.F. Herbert-Smith, Gemstones, pp. 429 and 437.

(2) Itid, p. 437; and R. Webster, Gems, Their Sources, Descriptions and Identification, p. 203.

CHAPTER TWO

The Archaeology of Lapis Lazuli.

This chapter is devoted to the archaeology of lapis lazuli, and to a discussion of the objects and their incidence in stratified contexts.

In general the provenance provides only a terminus ad quem, for as lapis lazuli had a high intrinsic value, the date of carving may be much earlier than the time of its abandonment. The collected dated occurrences do however give an indication of the fluctuating popularity of the material. So, for instance, it is of interest to see whether nearly all burials of a particular period are lavishly provided with lapis lazuli objects or whether only a few items are found in occasional graves. Such evidence must be fortuitous depending as it does on sporadic discoveries and excavation reports: future excavations may well necessitate alterations in the conclusions that follow.

While the provenance provides a terminal date, the character of the piece itself may indicate its period more closely. This particularly applies to seals, both cylinder and stamp, which are engraved with distinctive designs often assignable to a specific time. Beads are harder to classify for many shapes are universal and timeless. Certain shapes of bead arranged in a known form are however sometimes possible to place in their context.

### The Earliest Occurrence

The earliest period with which lapis lazuli is associated corresponds with the final stages of the Ubaid period, for it occurs in Stratum XIII at Tepe Gawra.<sup>1</sup>

In Gawra XIII a climax is reached in many fields of artistic endeavour - architecture, pottery and glyptic. The architectural remains are elaborate and impressive: the whole area excavated was devoted to the service of religion. The great acropolis, some 30 metres square, is formed by three temples arranged around a large courtyard. The temple walls are of exceptional thinness and are strengthened by a system of buttresses and niches. While sharing many features with Levels XII A and XII, Gawra XIII is remarkable for the fact that architecturally it has no links with preceding or succeeding strata. In keeping with its sophisticated and unique architecture, the pottery achieves a high standard of excellence; here we can see a final renaissance of the Ubaid painted pottery tradition before it gives way to the plain Uruk wares. Both new shapes and motifs were introduced, the most distinctive type was a beaker, a form common in Iran at that time. Rather crude animal designs were also attempted. Some of these new motifs, particularly the animal ones, are distinctly reminiscent of Iranian pottery design, as seen at such sites as Giyan V C and D, Sialk

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(1) Gawra II, p. 176.

III<sub>4-7</sub> and Bakun A.

In Gawra XIII for the first time there is evidence of the importation of a number of new semi-precious stones. These include turquoise, amethyst, lapis lazuli, agate, quartz, jadeite, beryl, diorite, haematite, steatite, and serpentine,<sup>1</sup> many of which originated in the mountainous area to the East.

While Tobler gives no catalogued examples of lapis lazuli beads found in contexts earlier than Gawra X (the Uruk period), yet his statement that beads occur as early as Gawra XIII is supported by a lapis lazuli stamp seal assigned to that stratum.<sup>2</sup> This seal, G.7-205 (Pl. 25, 1), unfortunately unstratified, is one of the finest found at Gawra. It illustrates the new glyptic first evolved in XIII, in which animal and human figures are so placed as to fill the entire surface of the seal. Three impressions found in XIII,<sup>3</sup> which illustrate this style, are closely similar to the lapis lazuli seal (compare Pl. 25, 1 with Pl. 25, 2 and 3) and it is these impressions which give reasonable grounds for Tobler's assumption that the seal belongs to Gawra XIII.

In Gawra XIII we have therefore all the signs of a well-organized community with a highly-developed religious

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(1) Gawra II, p. 192.

(2) Ibid, p. 189, Pl. LXXXVIII C and Pl. CLXIX, 167.

(3) Ibid, Pl. CLXIV, 100-102.

sense. They have a novel and distinctive architecture, a painted pottery of high quality, and a new and sophisticated glyptic art, using many imported stones, which themselves imply widespread trading connexions. We have to consider whether these productions are related to developments which in the South occurred in the Uruk period. There are, in Gawra, however various early features which suggest that it cannot be later than the end of the Ubaid, for although some of the carinated beaker forms suggest metal prototypes, comparatively little metal is found either in XIII or its succeeding phases XII A and XII. Similarly, the pottery in these three levels is still hand-made, not turned on the fast potters wheel, and the painted designs are an elaboration of traditional Ubaid patterns. Lastly, the settlement of XII, the final painted pottery level, was destroyed by fire:<sup>1</sup> the new occupants of the site in XI used the distinctive plain Uruk fabrics. It thus seems that Gawra XIII must mark the very end of the Ubaid tradition in the North: but by that time in the South the earliest developments of the Uruk period may already have been established, only spreading to the North at the end of Gawra XII, a settlement sacked by Uruk-ware people.

In the immediate neighbourhood of Gawra there were two other sites, Nineveh and Arpachiyah, both of which contained settlements contemporary with Gawra XIII.

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(1) Gawra II, p. 25.

A rough cylindrical bead of lapis lazuli was found in the Deep Sondage at Nineveh at a depth of - 63', that is at the top of Ninevite 2(c).<sup>1</sup> Ninevite 2(c) is dated to the end of Tell Halaf to Samarra. We have no other evidence to support so early a date for the importation of lapis lazuli. Since the area excavated at the bottom of this sondage was small and the stratigraphy not sharply defined, it seems probable that the bead belongs to the following period, Ninevite 3, which, like Gawra XIII, belongs to the final stage of Northern Ubaid.

Lapis lazuli is also among the materials carved into beads at Tell Arpachiyah. Unfortunately the lapis beads were not found in a stratified context,<sup>2</sup> but it is safe to assume that they belong to the later levels, contemporary with Gawra XIII.

We therefore find three sites in close proximity, all of which are using lapis lazuli during the final stages of Northern Ubaid, probably contemporary with the beginnings of Early Uruk in the South. The settlement at Gawra indicates that this was a time of some technical sophistication in the area. Gawra must have had a sufficiently powerful administration to organize widespread trade and to initiate the trade in lapis lazuli. No lapis lazuli has been found on contemporary southern sites.

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(1) H. Beck, "Beads from Nineveh", A.A.A. XX, p. 179, note 2.

(2) M.E.L. Mallowan and J. Cruikshank Rose, "Excavations at Tell Arpachiyah", Iraq II, p. 97.

The Uruk and Jemdat Nasr periods

Newcomers occupied the old site of Gawra in Stratum XI. They had forcibly ousted the earlier dwellers and, having done so, established themselves with their distinctive plain Uruk wares, showing that they had come from the South. But, despite this break in tradition, they continued to control the lapis lazuli trade and the early Uruk levels<sup>1</sup> are rich in the stone, particularly the tombs of Stratum X. Three of these shaft burials were richly furnished.

Tomb 109, a triple burial, contained stone jars, gold rosettes and studs, some inlaid with lapis lazuli,<sup>2</sup> and many beads of gold, electrum, turquoise and lapis lazuli. There were nearly 500 lapis lazuli beads in this single tomb,<sup>3</sup> some of the shapes of which are illustrated on Pl. 25, 4-6. In addition, there was a delicate gold and lapis pendant, G.4-759 (Pl. 25, 7).

As well as the usual beads, Tomb 110 contained a hemispherical stamp seal of lapis lazuli, G.4-749, which depicts a single upright human figure (Pl. 25, 8).<sup>4</sup>

The third rich tomb of Stratum X, no. 114, contained the famous electrum wolf's head, perhaps the most remarkable object of the period. The occupant was also buried with stone maces and a whetstone, bone spatulae, beads of gold

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(1) Strata XI-VII are assigned to the Uruk period.

(2) Gawra II, Pl. LIX a.

(3) Ibid, p. 88.

(4) Ibid, Pl. CVI, 37.

and stone, a gold rosette with a lapis centre (G.4-830) and a lapis hemispheroidal seal, G.4-831, showing a reclining sheep (Pl. 25, 10).<sup>1</sup> Loose in the soil of Gawra X was found a gold and lapis amulet, G.5-1456 (Pl. 25, 9).<sup>2</sup>

Compared with the abundant supplies of lapis lazuli in Stratum X, there is an appreciable decline in IX. Two fine beads and an acorn pendant, G.3-432,<sup>3</sup> from Tomb C (Pl. 25, 11) and an unstratified amulet of a recumbent animal, G.3-54 (Pl. 25, 12),<sup>4</sup> were the only finds made of lapis lazuli.

Lapis lazuli was even rarer in Gawra VIII C. Only two tombs, 24 and 31, were equipped with the stone: the former contained an ivory pin inlaid with lapis and turquoise (Pl. 25, 13),<sup>5</sup> the latter a few beads.

While in the North supplies of lapis lazuli were dwindling at the end of Uruk, in the South the stone appeared for the first time. The earliest piece in the South may be the fine seal, W.14772c 1 (Pl. 26, 1), from the Sammelfund of Banna III A. On grounds of style this seal has been assigned to the earlier level, Uruk IV (see below). The remaining pieces of lapis lazuli at Warka are found in Uruk III or Jemdat Nasr.<sup>6</sup> Most of them come from the Sammelfund

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(1) Gawra II, Pl. CVI, 38.

(2) Ibid, Pl. CLXXV, 66.

(3) Ibid, Pl. LVI c, 1-3.

(4) Ibid, Pl. CLXXV, 65.

(5) Ibid, Pl. CV, 29 and Pl. LIV.

(6) The Jemdat Nasr period, also known as Protoliterate c and d, was the final phase of the Uruk period, a time of rapidly increasing civilisation and urbanization, marked by the emergence of writing and cylinder seals.

and some, like the seal, may have originated in IV.

In Eanna III a marble bull calf, W.16018, was decorated with tiny pieces of lapis lazuli inlay in the shape of a Y.<sup>1</sup> In the later phase, Eanna III A, the excavators recovered a hoard of objects known collectively as the Sammelfund, but perhaps of more than one period, among which was the fine cylinder seal mentioned above. Other lapis lazuli objects in the hoard included a bird amulet W.14573a (Pl. 26, 4),<sup>2</sup> a pendant W.14766u (Pl. 26, 2),<sup>3</sup> a disc W.14819k 1 (Pl. 26, 5),<sup>4</sup> and a few beads and flower petals.

In levels of the Uruk III or Jemdat Nasr period, lapis lazuli has been found at a number of Southern sites. Unfortunately the small finds from the well-stratified sites in the Diyala valley remain for the most part unpublished in detail. Perkins states, however, that many beads and pendants were found and we may assume that lapis lazuli was among the materials used. She also describes a leaf-shaped amulet with a central rib, made of lapis lazuli, which was found in a late Jemdat Nasr (or Protoliterate d) context at Khafajah.<sup>5</sup> She compares this with a similarly-shaped amulet of stone from the Grey Eye Temple at Brak.<sup>6</sup>

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(1) H. Lenzen, "Die archaischen Schichten von Eanna", U.V.B. 7, p. 14, Pl. 23 (f).

(2) Kleinfunde, p. 26, Pl. 13 (e).

(3) Ibid, p. 41, Pl. 30 (e).

(4) Ibid, p. 45, Pl. 34 (e).

(5) A.L. Perkins, The Comparative Archaeology of Early Mesopotamia, p. 147.

(6) N.E.L. Mallowan, "Excavations at Brak and Chagar Bazar", Iraq IX, Pl. VIII, 3, G.59.

Other lapis objects from Brak in North East Syria are a fine frog amulet, F.548,<sup>1</sup> length 6.7 cm. (Pl. 26, 1), and a miniature model of a vase of Uruk type (Pl. 26, 3).<sup>2</sup> The frog was found in the Grey Brick stratum, Shaft 5, on the South side of the Eye Temple platform, and by stratification may be assigned to the early Jemdat Nasr period. The vase amulet came from the dump on the North side of Naram-Sin's palace and could therefore be at least Early Dynastic in date. It has, however, been compared with the small amulet from the Sammelfund W.14766u of the Jemdat Nasr period.

Necklaces of lapis lazuli were found in the "Jemdat Nasr" cemetery at Ur in no less than thirty-two of Woolley's three hundred and seventy graves.<sup>3</sup>

The date of this cemetery has been questioned by Delougaz who points out that a number of graves contain solid-footed goblets, and single-lugged and spouted jars, all criteria which he had isolated in the Diyala as being diagnostic of Early Dynastic I.<sup>4</sup> He states that the solid-footed goblet occurs only rarely in the earliest strata of Early Dynastic I in the Diyala but is common and well established a little later on. It has, however, yet to be proven that a vessel in the Diyala must be contemporary with

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(1) M.E.L. Mallowan, Iraq IX, p. 100, Pl. IX, 1.

(2) Ibid, p. 130, Pl. XX, 15.

(3) U.E. IV, pp. 104-126. Jemdat Nasr Cemetery graves nos. 17, 42, 93, 154, 155, 159b, 161, 179, 201, 210, 218, 219, 220, 221, 225, 261, 262, 279, 285, 296, 301, 309, 315, 325, 327, 330, 337, 347, 351, 353, and 359.

(4) P. Delougaz, O.I.P. LXIII, p. 138.

a similar vessel elsewhere and at Ur there are good grounds for believing that this goblet<sup>1</sup> was being used concurrently with typical Jemdat Nasr wares and considerably before the introduction of the plano-convex brick,<sup>2</sup> another of Delougaz' hallmarks of Early Dynastic I. The goblets occur in Pit F, Stratum F, a level where the original building was constructed of riemchen, while the reconstruction was carried out in plano-convex bricks.<sup>3</sup> Large numbers of these goblets also occur in the preceding Stratum G, which was built entirely of riemchen bricks. In this stratum they were associated with typical Jemdat Nasr pottery, such as the plum red and red and black painted wares.<sup>4</sup> This pattern of the goblets occurring in the same level as Jemdat Nasr painted wares is also repeated at Warka.<sup>5</sup>

It is possible that the single-lugged carinated jar<sup>6</sup> and the spouted jar<sup>7</sup> were also in use at Ur prior to their introduction in the Diyala in Early Dynastic I. There is, however, an argument that the Ur cemetery could have lasted into the beginning of E.D. I and indeed the exact moment of the transition from Jemdat Nasr to E.D. I is hard to fix.

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- (1) Ur pot type J.N. 23 and 25 cf. Diyala, O.I.P. LXIII, Pl. 46.
  - (2) P.R.S. Moorey, "A Reconsideration of the Excavations on Tell Inghara", Iraq XXVIII, p. 34.
  - (3) U.E. IV, p. 61.
  - (4) Ibid, p. 62.
  - (5) A. Haller, "Die Keramik der archaischen Schichten von Uruk" U.V.B. IV, Pl. 20, b and c.
  - (6) Ur, JN 104 and 105 cf. Diyala, OIP LXIII, Pl. 47.
  - (7) Ur, JN 121 and 122 cf. Diyala, OIP LXIII. Pl. 37-38.

That the one period slipped easily into the other is well proven by the building in Pit F, Stratum F, begun in rhen-chen and repaired in plano-convex bricks.

Although some of the graves in the Jemdat Nasr cemetery at Ur may belong to the early part of Early Dynastic I, we are unfortunately unable to come to any conclusion concerning the typological development of the lapis lazuli beads because in no case has Woolley illustrated them. Furthermore it has not been possible to examine enough in museums.

The Jemdat Nasr levels at Telloh are alleged to have produced a number of lapis lazuli objects, including a small amulet in the form of a fish and a number of beads.<sup>1</sup>

#### Cylinder Seals

As has been said before, the date of the provenance only indicates the terminus ad quem of that object. Seals were particularly liable to lengthy periods of use because they were valued for their magical powers, their craftsmanship and their material. This is well illustrated on the sealings of Esarhaddon's Vassal Treaties. He ratified these treaties with three old seals, which were perhaps thought to be especially venerable. The most recent seal belonged to his father, Sennacherib: the second, the seal of the Assyrian national god, Assur, probably belonged to the Old Assyrian period, while the third perhaps belonged

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(1) A. Parrot, Tello, Vingt Campagnes de Fouilles, 1877-1933, pp. 51-2, fig. 12 d; and H. de Genouillac, Fouilles de Telloh I, Epoques Présargoniques, Pl. 42-3.

to Tiglath Pileser I, c. 1,100 B.C., of the Middle Assyrian period.<sup>1</sup>

It is often possible to assign seals to a specific period because of the distinctive designs engraved on them. This principally applies to finely carved specimens which belong to the "classic" style of a glyptic period. There are, however, certain groups of seals for which the stylistic criteria are still fluid. One of these groups are seals engraved with the ubiquitous presentation scene, which began in Early Dynastic III and continued into the Kassite period, over a thousand years later. While the best of these can usually be precisely placed, many of them are poorly carved and their chronological position is hard to determine. Another group consists of seals depicting animal contest scenes. These began in Early Dynastic II and lasted into the Third Dynasty of Ur. In addition, there are large numbers of "transitional" seals, which could for instance belong either to Early Dynastic III or to the Akkadian period. As well as the above problems, there are also those caused by seals originating in peripheral regions. Nonetheless, despite these warnings, seals still remain the most sensitive diagnostic of the use of lapis lazuli.

#### Uruk and Jemdat Nasr Seals

The newly emerged art of carving designs on cylinders,

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(1) D.J. Wiseman, "The Vassal Treaties of Esarhaddon", Iraq XX, p. 14 ff.

somewhat surprisingly, appears to demonstrate a high degree of excellence from the beginning. Uruk IV seals are distinguished by careful composition and fine work. The design is usually deeply engraved and all signs of the preliminary hollowing with a bow drill have been removed by careful work with a graver. Subjects are varied including ritual, hunting and battle scenes.<sup>1</sup>

There is one seal of lapis lazuli which probably belongs to Uruk IV, although it was found in a later Uruk III context. The seal, W.14772c 1 (Pl. 27, 1), was found in the Sannelfund in Eanna III A.<sup>2</sup> It shows a ritual, being enacted within the confines of a boat, which is steered by the usual two men, one fore and one aft. This boat and its men can be seen on another Uruk IV seal.<sup>3</sup> The central figure, both bearded and clothed, may be the ruler of a city and occurs again on a seal also showing a ritual scene of the period.<sup>4</sup> The man is facing an altar (?) carried on the back of a bull: a similar motif appears on the alabaster vase from Warka.<sup>5</sup> Behind him is placed a rectangular object of uncertain use.

Since the actual carving is finely and carefully done,

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- (1) C.A.N.E.S. I, p. 2.
  - (2) Kleinfunde, p. 28, Pl. 17 a.
  - (3) H. Frankfort, Cylinder Seals, Pl. III d.
  - (4) Ibid, Pl. V c.
  - (5) H. Frankfort, Art and Architecture of the Ancient Orient, Pl. 3.

and the motifs are typical of those of Uruk IV, it seems probable that the seal originated in Uruk IV, a suggestion originally made by Henri Frankfort.<sup>1</sup> If this is so, the seal is remarkable in that it appears to be the earliest object of lapis lazuli discovered to date in the South of Iraq.

The seal is pierced longitudinally by a copper rod, the lapis head of which is carved in the shape of a reclining ram. This peculiarity of fixing a tiny animal figurine to the seal is again typical of Uruk IV, although it does continue into III (see Pl. 27, 2).

Another lapis seal, W.14766f (Pl. 27, 2),<sup>2</sup> also from the Sammelfund, again shows a familiar Uruk scene - that of feeding the temple herd - but here the technique has deteriorated when compared with that of the preceding seal. The drawing is sketchy and traces of the work with the bow drill are abundantly clear. This coarse execution is usually taken as evidence of the less careful style of workmanship which became common in Uruk III or Jemdat Nasr. The scene itself is interesting because the hunter carries a recurved bow, as on the basalt stele usually associated with Uruk IV, and wears a skirt identical in style with that illustrated on the great alabaster pedestal vase found

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(1) H. Frankfort, Cylinder Seals, p. 20.

(2) Kleinfunde, p. 29, Pl. 17 b.

in Eanna III.

During Jendat Nasr times the repertoire of subjects was reduced and became stereotyped. Far greater numbers of seals were carved and under the pressure of mass-production - Jendat Nasr seals were exported to countries as distant as Egypt - the technique degenerated. Typical scenes include heraldic designs and rows of animals and pig-tailed women.

As can be seen from Plates 27 and 28, rows of animals were a popular subject for seals carved in lapis lazuli. The animal depicted appears to be a type of horned capride, perhaps an ibex. They are shown standing among trees (Pl. 27, 3), walking (Pl. 28, 2-5) and running (Pl. 27, 4-6), in single, double and triple registers.

Two of the seals illustrated depict heraldic designs (Pl. 28, 1 and 6): the first pictures browsing ibex behind which stands a pig-tailed woman with wildly flying plaits: the other shows two bulls among the mountains.

Contemporaneously with these naturalistic designs a new class of seal was evolved, decorated with a variety of geometric designs. These were usually carved on tall thin cylinders of steatite, although lapis lazuli was also quite popular (see Plate 29). It is perhaps relevant to note that one of the animal scenes (Pl. 27, 6) is carved on an elongated cylinder normally associated with geometric designs.

The pattern of lapis lazuli distribution during the Uruk and Jemdat Nasr periods in Mesopotamia is interesting. In Early Uruk it is confined to the North, where quite large quantities are used in Gawra X. Supplies decrease and almost stop there by the end of Uruk, while for the first time a piece of lapis lazuli is found in the South. In the Jemdat Nasr period the use of lapis has increased considerably. It occurs on more sites and larger quantities have been recovered. There are no fewer than 34 seals of lapis lazuli of the Jemdat Nasr style among the collections analysed. In addition to the seals, there are also a number of other objects, such as beads and amulets.

#### The Early Dynastic Period

Although lapis lazuli was imported into Mesopotamia from Late Ubaid times, greater quantities are found in the Early Dynastic period. Lapis lazuli occurs particularly plentifully at Ur, where the stone was used for many varying purposes. The presence of large amounts of a non-indigenous luxury material suggests that trade at this time was free from any check, either political or economic.

The archaeological subdivisions of the Early Dynastic period have been clearly determined by reference to the architectural structures in the Diyala valley. There, Delougaz observed a series of ten successive Sin Temples, which, as far as the Diyala district is concerned, appears

to correspond with a gradual change in the cultural background.

One of the decisive archaeological hallmarks of the Early Dynastic period in Sumer and Akkad is the cushion-shaped plano-convex brick,<sup>1</sup> and this first occurs in Sin Temple VI: the earlier levels, I-V, which contain no such bricks have been assigned to the Jemdat Nasr period (Proto-literate c and d), while the later belong to Early Dynastic I, II and III.<sup>2</sup>

It is difficult to relate the above archaeological sequences to the historical ones, which should be capable of determination within the Sumerian King List. As a working hypothesis it might be suggested that the pre-flood kings represent an historical memory of E.D. I and that Ziusudra, who was reigning at the time of the flood, was the last of this series.<sup>3</sup> E.D. II would comprise the names of the twenty-three kings of Kish, beginning with Etana and ending with En-men-bara-gisi and his son, Agga. Some of

- (1) It is possible that the plano-convex brick occurred later in the south than in the Diyala, see p. 45.
- (2) Delougaz and Lloyd, O.I.F. LVIII, pp. 6-78 and p. 117 ff.
- (3) In our tentative suggestion that the pre-flood monarchs may be assigned to E.D. I, we have to recall Jacobsen's contention that this series of rulers was added to the King List as a kind of introduction and was, perhaps, an afterthought. T. Jacobsen, The Sumerian King List, p. 70, note 1. It is not at present possible to assign any of these historical names to their corresponding archaeological phases. It should be noted that Jacobsen in the Sumerian King List assigned the first series of rulers after the Flood to E.D. II, see ibid, p. 189 and Table II.

these Kish kings must have overlapped with others from Uruk.<sup>1</sup> Early Dynastic III begins with Gilgamesh, a contemporary of Agga.

A brief description is given below of the principal archaeological criteria of the three phases of Early Dynastic, to each of which tentative historical correlations have been proposed above.

### Early Dynastic I

Delougaz assigned Sin Temples VI and VII to E.D. I.<sup>2</sup> While there are few changes in plan between the Early Dynastic Sin VI and Jemdat Nasr Sin V, both the use of the plano-convex brick and the fact that the temple and the courtyard are raised on an artificial terrace (not only the temple as in V) mark the emergence of a new era. The architectural evidence points to a definite cultural continuity between Jemdat Nasr and Early Dynastic. Whatever new influences caused the development of the Early Dynastic, and even if some immigration had occurred, the older stocks remained; the organization of the state and cultural development was uninterrupted.

The architectural evidence of a steady progression rather than an abrupt change is borne out both by pottery

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- (1) M.E.L. Mallowan, "Noah's Flood Reconsidered", Iraq XXVI, p. 69, note 21 a; and Jacobsen, The Sumerian King List, p. 152.
- (2) Delougaz and Lloyd, O.I.P. LVIII, pp. 122-123.

and glyptic styles. The most distinctive pottery of E.D. I is Scarlet Ware, which develops from the polychrome Jemdat Nasr vessels,<sup>1</sup> and it is this ware which provides clear evidence of contact with Iran. Scarlet Ware and its later derivatives have been found at Tepe Aliabad, at Tepe Khazineh, at Susa in ancient Elam,<sup>2</sup> and also at Tepe Mirvali in Luristan.<sup>3</sup> Another hallmark of E.D. I in the Diyala is the slender goblet with a solid foot made of a coarse porous ware.<sup>4</sup> This vessel occurs in the South a little earlier, see p. 45.

E.D. I cylinder seals achieve a breakaway from the repetitive geometric motifs of Jemdat Nasr glyptic, but only within the same artistic idiom. Design is still mainly concerned with achieving a continuous decorative pattern, admirably suited for sealing clay labels. These interlaced designs are known as the "Brocade Style".<sup>5</sup> Frankfort claimed that there were Early Dynastic I impressions in S.I.S. IV, the level under the Royal Cemetery at Ur,<sup>6</sup> an

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- (1) P. Delougaz, O.I.P. LXIII, p. 60 f.
  - (2) Gautier et Lampre, "Fouilles de Moussian", M.D.P. VIII, pp. 129, 136-143; and E. Poitier, "Etude Historique et Chronologique sur les Vases Peintes de l'Acropole de Suse", M.D.P. XIII, p. 48, Pls. XXV, XXX: see also A. Parrot, Sumer, fig. 126, for illustration of Scarlet Ware vase from Susa showing a 'sigurat'.
  - (3) A.U. Pope, "A Note on some pottery from the Holmes Luristan Expedition of the Institute", Bulletin of the American Institute for Persian Art and Archaeology IV, 3, p. 122.
  - (4) Delougaz, O.I.P. LXIII, p. 56.
  - (5) C.A.N.E.S. I, p. 8.
  - (6) H. Frankfort, Cylinder Seals, pp. 40-41.

indication that the beginning of the Royal Cemetery is not likely to be earlier than E.D. II.

In Jemdat Nasr trading connections had been far-flung: while Jemdat Nasr seals are found in Egypt,<sup>1</sup> plentiful supplies of lapis lazuli attest trade relations with Iran and Afghanistan. In E.D. I, however, relations are with areas closer home. As we shall see the trade in lapis lazuli appears to cease completely.

### Early Dynastic II

The shortest phase of the Early Dynastic is the second which is considered to be a transitional period leading to III, when Sumerian civilisation came to its finest and fullest flower. Delougaz assigned Sin VIII and the beginning of IX to E.D. II,<sup>2</sup> but there is a case for believing that Sin IX did not begin until E.D. III.<sup>3</sup>

In Sin VIII we see for the first time that the walls are built on massive foundations in specially prepared trenches; the sanctuary is lengthened to 15 metres.<sup>4</sup> The column first occurs in Sin VIII and is one of the architectural hallmarks of the time. It is also found in Ishtar Temple C at Mari<sup>5</sup> and at Kish.<sup>6</sup>

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(1) Wolfgang Helck, Die Beziehungen Ägyptens zu Vorderasien im 3. und 2. Jahrtausend v. Chr., pp. 5-12.

(2) Delougaz and Lloyd, O.I.P. LVIII, pp. 122-123.

(3) M.E.L. Mallowan, forthcoming fascicule on the archaeology of the Early Dynastic Period in C.A.H. I.

(4) Delougaz and Lloyd, O.I.P. LVIII, p. 52 ff.

(5) Ibid, pp. 57-8: A. Parrot, M.A.M. I, Pl. IV.

(6) Ernst Mackay, A Sumerian Palace and the 'A' Cemetery at Kish, Mesopotamia, Part II, Pl. XXI.

Monumental sculpture of human figures makes its first appearance. Frankfort attempted to classify E.D. II and III sculpture on grounds of style,<sup>1</sup> for the stratigraphic evidence is not altogether continuous as far as the statuary is concerned and there is scope for disagreement on the subject. In E.D. II we have signs of a material prosperity which heralds the abundant wealth of III.

Scarlet Ware continues from I, reaching its full development in II.<sup>2</sup> Examples found in vaulted tombs at Mari,<sup>3</sup> where it may be as late as E.D. III, as well as in Iran,<sup>4</sup> illustrate the spread of Sumerian arts and crafts. The inscriptions at Mari are, for the most part, in Semitic Akkadian, not Sumerian.

The fruitstand and the pilgrim flask are new dating criteria, as is the plastic ridge on jars.<sup>5</sup> Glyptic of E.D. II is still mainly concerned with the creation of a satisfactory decorative pattern. Deep and often coarse linear engraving replaces the shallow incisions of I. Design changes to accommodate this new method of cutting: the principal motif is the contest scene depicting rows of battling animal and human figures.<sup>6</sup>

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- (1) H. Frankfort, Sculpture of the Third Millennium B.C. from Tell Asmer and Khafajah, pp. 19-42.
  - (2) Delougaz, O.I.P. LXIII, p. 80.
  - (3) A. Parrot, M.A.M. I, p. 11.
  - (4) Gautier et Lampre, "Fouilles de Moussian", M.D.P. VIII, pp. 129 and 136-142.
  - (5) Delougaz, O.I.P. LXIII, pp. 85, 83 and 80 respectively.
  - (6) C.A.N.E.S. I, p. 9.

It is in E.D. II that names from the Sumerian King List, such as Enmerkar and Enmenbaragisi, can first be considered to be historical figures. The legendary Gilgamesh, king of Uruk, is now known to have been a real king, reigning at about the same time as Agga, king of Kish, and Mes-anni-padda, king of Ur, at the beginning of E.D. III.<sup>1</sup>

The father of Agga of Kish is Enmenbaragisi, who claims to have despoiled Elam. He and his son built the Tummal at Nippur<sup>2</sup> and, more important from an historical point of view, his name appears on an E.D. II vase from Khafajah.<sup>3</sup>

The King List records four kings reigning in Uruk prior to Gilgamesh - Mes-kiag-gasher, Enmerkar, Lugalbanda and Dunuzi - all of whom can be assumed to have reigned in E.D. II.<sup>4</sup>

	<u>Kish</u>	<u>Uruk</u>
ED II		Mes-kiag-gasher Enmerkar Lugalbanda Dunuzi
ED III	Enmenbaragisi	
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ED III	Agga laid siege to	Gilgamesh

There is a series of epic tales about both Enmerkar and his son, Lugalbanda.<sup>5</sup> A particularly interesting epic is concerned with a trade war waged by Enmerkar on the

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- (1) M.E.L. Mallowan, "Noah's Flood Reconsidered", Iraq XXVI, p. 67.
  - (2) C.J. Gadd, "Cities of Babylonia", C.A.H. I, Ch. XIII, p. 19 ff: S.N. Kramer, The Sumerians, p. 47.
  - (3) M.E.L. Mallowan, Iraq XXVI, p. 68, note 20.
  - (4) F. Jacobsen, The Sumerian King List, Table II.
  - (5) S.N. Kramer, The Sumerians, p. 273.

Iranian state of Aratta. Enmerkar wanted gold, silver and semi-precious stones, particularly lapis lazuli, to beautify various shrines and temples, especially the Apsu Temple in Eridu. These commodities were possessed in abundance by Aratta, whose people were also skilled artificers.

Enmerkar was determined to obtain supplies, either by force or by barter for grain, which Sumer possessed in abundance. He therefore implored Inanna:

"O my sister, Inanna, for Erech  
Let them (the people of Aratta) fashion artfully  
gold (and) silver  
Let them ... pure lapis lazuli from the slab,  
... ..  
Of the holy giparru where you have established  
(your) dwelling,  
May (the people of) Aratta fashion artfully its  
interior.  
... ..  
Let Aratta submit to Erech,  
Let the people of Aratta,  
Having brought down the stones of the mountains  
from their highland  
Build for me the great chapel, set up for me the  
great shrine.<sup>1</sup>"

The exact course of this verbose and repetitive struggle is hard to follow: the outcome is, however, fairly certain: in return for the grain sent by Enmerkar, stones and metals reached Erech from Aratta.

"Poured into them the grain for the storehouse,  
added ...  
Having loaded them on the crate-carrying donkeys,  
Having placed them on the sides of the transporting  
donkeys,  
The king, the lord of great wisdom,  
The lord of Erech, the lord of Kullab,  
Directed them on the road to Aratte. <sup>2</sup>

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(1) S.E. Kramer, Enmerkar and the Lord of Aratta, p. 9, line 38 ff.

(2) Ibid, p. 27, line 330 ff.

"To transport gold, silver and lapis lazuli, the task ...  
... ..  
For Inanna, the queen of Eanna,  
In the courtyard they heap them up for the storehouse."<sup>1</sup>

To reach Aratta, Enmerkar's herald had first to pass through Anshan "from the side to the head",<sup>2</sup> (Anshan is probably located to the south of Elam) and then cross seven further mighty mountains:

"Before the ... of Anshan,  
He (the herald) prostrated himself like a young singer,  
Awd by the dread of the great mountains,  
He wandered about in the dust,  
Five mountains, six mountains, seven mountains, he  
crossed,  
Lifted (his) eyes, approached Aratta."<sup>3</sup>

The situation of Aratta is not yet known, despite the indication of its proximity to Anshan.

To return to the epic, it is relevant to note that Enmerkar is represented as involved in a difficult and dangerous struggle during E.D. II in order to obtain supplies of lapis lazuli and other luxury goods. This is interesting when the archaeological paucity of lapis in E.D. I (see p.68-9) is considered. In contrast in E.D. II and particularly in III lapis lazuli is once again abundant (see p.86). It therefore appears that this epic tale is the story of a cold war conducted in E.D. II, perhaps by Enmerkar, to reopen a trade which had ceased in E.D. I.

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- (1) S.N. Kramer, Enmerkar and the Lord of Aratta, p. 45, line 620 ff.
  - (2) S.N. Kramer, The Sumerians, p. 273.
  - (3) S.N. Kramer, Enmerkar and the Lord of Aratta, p. 17, line 166 ff.

### Early Dynastic III

It is during this, the longest and most glorious phase of the Early Dynastic, that Sumerian civilisation achieved its highest point. Finds in the "royal tombs" at Ur illustrate a people with an advanced artistic taste which was exemplified by a profusion of luxurious ornament, almost barbaric in splendour. The "royal" dead are covered with jewels and surrounded by precious objects: they are accompanied by large retinues, the members of which are also lavishly equipped. It is an age of luxury, culture and a developing literature.

Evidence of Sumerian culture and power extends to (Semitic) Mari on the Euphrates and to Iran. Trade contacts are once again widespread and many luxury goods are imported, including ivory and, perhaps already, Indiesque seals, as well as etched carnelian beads. There is one example of a stone vase of this period which had apparently been exported to the Indus valley.

Sites with E.D. III occupation occur on the Diyala, at Ur, Kish, Fara, Tello, Susa and Musyan and at Mari. At Kurfajah, Delougaz assigned part of Sin IX and Sin X to the period, but, as we have said earlier, it is probable that all of Sin IX belongs to E.D. III. Oval I is contemporary with Sin IX, Oval II with Sin X,<sup>1</sup> while Oval III continues the Diyala story into what the excavators term the

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(1) Delougaz and Lloyd, O.I.P. LVIII, pp. 122-123.

"Proto-Imperial" period, actually probably the end phase of E.D. III, see p.65.

A scattered bed of ashes separates the level of Sin Temple IX and Temple Oval I from that of Sin Temple X and Temple Oval II. Professor Mallowan has recently suggested that this destruction may perhaps be attributed to Eannatum of Lagash who is known to have defeated Ur, Akshak and Mari. A burnt stele belonging to a priest of Akshak was actually found in Sin IX. There is archaeological evidence for Eannatum's overlordship at Ur and similarly a burned stratum at Mari has been observed stratigraphically at this period.<sup>1</sup>

The plan of the rebuilt Sin Temple X was considerably enlarged and extended over the area formerly occupied by private houses, which had been destroyed in the fire. It contained for the first time two cellas instead of one.

E.D. III pottery consists mainly of unchanged survivals or modified versions of E.D. II vessels. New forms are rare: pilgrim flasks and conical bowls are common.<sup>2</sup> The upright "granny pot" handle continues from II, although towards the latter part of the period this is developed into the "goddess" handle.<sup>3</sup> A significant feature is the absence of painting: decoration is achieved by incision, plastic ridges or applied

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(1) M.E.L. Mallowan, forthcoming fascicule in C.A.H. I.

(2) Delougaz, O.I.P. LXVIII, p. 100, 94 and 142-3 respectively.

(3) Ibid, pp. 87-90.

clay "studs".<sup>1</sup> It is perhaps relevant to note that the bowls of Hissar IIB are also decorated with clay "studs".<sup>2</sup>

The contest scenes first shown on cylinder seals in II are developed in III. Modelling and relief is a feature of the new style which no longer relies exclusively on linear sketches. In addition to contest scenes, banqueting, chariot and offering scenes are common. Friezes centred around a spread eagle, often identified with Imdugud, although begun in II are indicative of III glyptic.<sup>3</sup>

Since the Early Dynastic is the great "heroic" age of the Sumerians, we again have epic tales about the kings of the period, in particular about Gilgamesh, who with Agga and Mes-anni-padda, lived at the beginning of E.D. III.

According to the King List, the first three post-diluvian dynasties were Kish, Erech and Ur respectively. From the short epic Agga and Gilgamesh<sup>4</sup> we know that Agga of Kish attacks Gilgamesh at Erech and only raises the siege after a truce is concluded. It is Mes-anni-padda of Ur, not Gilgamesh of Erech, who brings the reign of Agga, and hence the First Dynasty of Kish, to an end, and transfers the kingship to Ur, not Erech.<sup>5</sup> A seal of lapis lazuli belonging to Nin-tur-nin, wife of Mes-anni-padda, and

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(1) Delougaz, O.I.P. LXIII, pp. 102, 143-4.

(2) E.F. Schmidt, Tepe Hissar, Pl. XXVI, H.4783.

(3) C.A.N.E.S. I, pp. 11-19.

(4) A.N.E.T., pp. 45-47.

(5) M.E.L. Mallowan, "Noah's Flood Reconsidered", Iraq XXVI, p. 67.

inscribed with his name and titles as King of Kish, was found in the Royal Cemetery (Pl. 35, 4).<sup>1</sup>

A "treasure" of E.D. III date has recently been found at Mari.<sup>2</sup> It was given by Mes-anni-padda to the first king of Mari - Anshud.<sup>3</sup> Among other items was a small amulet of lapis lazuli and gold, representing an eagle (Pl. 20, 1). It is rather crudely constructed: a single flat piece of lapis forms the body and outstretched wings, while head and tail are of gold. It is perhaps interesting to compare this Early Dynastic eagle with one carved three millennia later in Byzantium from a single piece of the stone (Pl. 20, 2). The later carvers had vanquished the difficulties of their material.

The King List records Mes-anni-padda as reigning for eighty years. This is probably because the reign of his like-named son, A-anni-padda, was joined to his own number of regnal years. A-anni-padda, who built a small temple at the nearby site of Al-Ubaid, was succeeded by Mes-kiag-nanna.<sup>4</sup> The last known ruler of this dynasty at Ur was Elulu.

A valuable building inscription has recently been pieced together and translated, which gives us the initial builder and the subsequent renovators of the Tunnal at Nippur.

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(1) U.E. II, pp. 312-313, U.8981.

(2) A. Parrot, Syria XLII, pp. 24 and 216-224, Pl. XV, 3, M.4405.

(3) The equation of the two names does not appear to be totally satisfactory, but is accepted without reserve by Dossin and by Parrot.

(4) C.J. Gadd, C.A.H. I, Ch. XIII, p. 22.

The first king to repair the Tummal after its building by Enmenbaragisi and Agga was Gilgamesh, together with his son, Ur-lugal: the second renovation was carried out by Mes-anni-padda and Mes-kiag-nanna.<sup>1</sup>

After these rulers of the Heroic Age whose deeds were so long remembered, history relapses into a list of names accompanied by fantastic lengths of reign, until the story is resumed with the record of a boundary dispute between two minor Mesopotamian states, Lagash and Umma.

Mesilim of Kish mentions the name of Lugalshagengur of Lagash, who himself is preceded by Enkhegal. The main Lagashite dynasty begins with Urnanshe, Lugalshagengur's successor. Urnanshe was an important monarch who extended the power of Lagash over much of Mesopotamia. His name is found on a plaque at Ur and on buildings, works of art and inscriptions. One of the inscriptions is of particular interest because of the light it sheds on the trading conditions of the time. It refers to "ships of Tilmun" which bring cargoes of wood from the mountains.<sup>2</sup> While little is known of the reign of his son, Akurgal, Urnanshe's grandson, Eannatum, also conquered much of Sumer. Eannatum's inscriptions deal, however, mainly with the Umma boundary

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(1) Two readings of the beginning of the Tummal inscription are known: in one, the order given is Enmenbaragisi, Mes-anni-padda and Gilgamesh - Kramer, The Sumerians, pp. 46-9. Sollberger has, however, found alternative tablets which restore the King List order of Enmenbaragisi, Gilgamesh and Mes-anni-padda, which seems more acceptable. E. Sollberger, "The Tummal Inscription", Journal of Cuneiform Studies XVI, pp. 40-47.

(2) C.J. Gadd, C.A.H. I, Ch. XIII, p. 26.

dispute; and it is one of his victories over the men of Umma which is commemorated in his famous Victory Stela.<sup>1</sup> Umma recovered many of the disputed lands during the reign of Enannatum, brother of Eannatum: but Enannatum's son, Entemena, recovered Lagash's former boundaries. Buildings at Lagash associated with Entemena are no longer constructed of the familiar Early Dynastic brick, the plano-convex, but with flat bricks,<sup>2</sup> and on account of this brick change Delougaz named the following eighty years from the reign of Entemena to that of Sargon of Agade the "Proto-Imperial" period. It is perhaps worth noting that the material discovered at Telloh associated with Eannatum appears to be decisively E.D. III in style, finely and precisely carved. We need not therefore expect much artistic development and change only two reigns later.

Although Delougaz succeeded in isolating a few pot types, the most important of which is a tall cylindrical cup,<sup>3</sup> criteria for this short phase are few and on the whole inconclusive, particularly as the period is only well represented at Lagash. In this thesis therefore the "Proto-Imperial" period will be equated with the final phase of E.D. III.

Entemena was one of the greatest of the Lagashite rulers.<sup>4</sup>

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- (1) C.J. Gadd, C.A.H. I, Ch. XIII, pp. 27-8.
  - (2) Frankfort, "Oriental Institute Discoveries in Iraq, 1933-34", Oriental Institute Communications 19, p. 80.
  - (3) Delougaz, O.I.F. LXIII, p. 146. Diyala type B.256.200 and C.257.210 cf. Ur Royal Cemetery type 16.
  - (4) C.J. Gadd, C.A.H. I, Ch. XIII, p. 29.

Among his many beneficent works he constructed a waterway linking the Tigris and Euphrates rivers. Little is known of events in Lagash or in Sumer during the rest of this time. Entemena was succeeded by his son, Enannatum II, and he, in turn, by two priest-kings, Enetarzi and Lugalanda, neither of whom reigned for long.

Urukagina then seized power, reigning for only eight years, during which he ruled over all the territory from Lagash to the sea.<sup>1</sup> He built many temples and two canals. His name was also connected with the reform of corrupt social usages. Urukagina (and Lagash) was overpowered by the men of Umma, led by Lugalzaggisi, in a bloody surprise attack.<sup>2</sup> The Ummaites, Urukagina recorded, attacked and carried off precious metals and lapis lazuli.<sup>3</sup> Lugalzaggisi continued his career of conquest and ruled all Sumer for some 25 years. He was the only member of the Third Dynasty of Uruk, a dynasty which was ended by the accession of Sargon of Agade.

#### Lapis Lazuli in E.D. I

As has been said before, the sites which provide the best stratigraphic framework for E.D. I are those in the Diyala valley, but unfortunately the volume recording the small finds has yet to be published. In its absence, there

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(1) C.J. Gadd, C.A.H. I, Ch. XIII, p. 30.

(2) Ibid, p. 52.

(3) S.N. Kramer, The Sumerians, p. 322, no. 27.

is little available information about them, for the list of objects at the end of some of the Diyala publications does not usually specify materials.

It is possible that some of the graves in the Jemdat Nasr cemetery at Ur may belong to E.D. I, but the evidence is inconclusive (see pp. 44-46).

The dating of the Y Cemetery at Kish has recently been reconsidered by Mr. R. Moorey, who has prepared an analysis of the sequence at Kish.<sup>1</sup> In this he suggests a date of E.D. I-II for the Y Cemetery, excluding the Chariot Burials.<sup>2</sup> Some of the graves are recorded as containing a few beads of varied materials, such as lapis lazuli, carnelian, quartz and shell.<sup>3</sup> They are not recorded individually with their separate contents and we cannot therefore discover whether the beads in E.D. I and in E.D. II graves were different, or if lapis beads occurred specifically in graves of one or the other period. Grave Y.463, which is illustrated in Fig. 5 of Kish IV and described briefly on p. 20, may contain pots of E.D. I type, but the bead material is not described.

A few lapis lazuli beads occur in the later levels at Tepe Gawra: some were discovered in Stratum VII,<sup>4</sup> which

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- (1) Mr. P.R.S. Moorey kindly allowed the author to see this analysis prior to its publication in Iraq XXVIII. She has made extensive use of his conclusions.
  - (2) P.R.S. Moorey, "A Reconsideration of the Excavations on Tell Ingharra (East Kish), 1923-1933", Iraq XXVIII, pp. 38-41.
  - (3) L.Ch. Watelin, Excavations at Kish, IV, p. 28.
  - (4) E.A. Speiser, Excavations at Tepe Gawra I, pp. 134-5.

contains the famous Ninevite 5 style chalice. Ninevite 5 is considered to begin at the end of the Jemdat Nasr period and to continue into E.D. II.<sup>1</sup>

At Chagar Bazar a single lapis lazuli bead, a flattened double conoid, occurred in Level 4,<sup>2</sup> a level also characterized by Ninevite 5 ware.

A few scattered beads may therefore occur in E.D. I levels at Ur, Kish, Gawra and Chagar Bazar, but the stratigraphic evidence is inconclusive, and they could equally well belong to Jemdat Nasr or E.D. II. What is remarkable is that none of the distinctive "Brocade Style" cylinder seals associated with the period are made of lapis lazuli. There is only one lapis seal which might belong to E.D. I though, once again, the evidence is inconclusive. The seal shows three superimposed registers of running caprides and Buchanan considers it post-Jemdat Nasr in style. It could however still be Jemdat Nasr for there is no abrupt glyptic transition. The seal, now in the Ashmolean, comes from the Y Cemetery at Kish.<sup>3</sup>

The common forms of beads are themselves poor dating material and there are in fact no lapis beads that can be proved stratigraphically to belong to E.D. I: in view of the surprising absence of proven E.D. I lapis seals it seems likely that any beads found in possible E.D. I contexts

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- (1) M.E.L. Mallowan, "Ninevite 5", Vorderasiatische Archäologie, Studien und Aufsätze, pp. 142-154.
  - (2) M.E.L. Mallowan, "The Exc. at T. Chagar Bazar", Iraq III, p. 24, no. 9.
  - (3) Ashmolean I, pp. 18-20, no. 93, Pl. 7.

are survivals from the preceding Jemdat Nasr period, when supplies of the stone were abundant. There appears, therefore, to have been a shortage or complete breakdown of supplies of lapis lazuli throughout Early Dynastic I: trading relations must have been disrupted between the Afghan source and Mesopotamia.

#### Lapis Lazuli in E.D. II and III

It is in Early Dynastic II that Enmerkar, Lord of Uruk, forces the people of Aratta to supply him with gold, silver and semi-precious stones, particularly lapis lazuli, in exchange for Sumer's surplus of grain (see p. 58). Enmerkar was determined to re-establish the traffic in precious metals and stones, which had ceased in E.D. I, so that the temples of his gods should be decorated in a sufficiently luxurious manner. Once he had reopened this route, there was no lack in Sumer of luxury goods right through to the end of the Early Dynastic era and into the Akkadian period.

E.D. II is only a relatively short transitional period which acts as an introduction to the luxurious heights of Sumerian civilisation in III. There are comparatively few distinct archaeological criteria, for it is a time of gradual change without sharp demarcation.

At Ur knowledge of these levels is scanty, for it is doubtful whether the great Royal Cemetery begins prior to E.D. III (see below). The Y Cemetery at Kish continues in

use in E.D. II - some of the graves have beads of lapis lazuli (see above). The Chariot Graves in the Y Cemetery (Y.237, Y.357 and Y.529) are later than the others and, according to Moorey, belong to the last stages of E.D. II or to the earliest part of III.<sup>1</sup> Unfortunately their equipment is not catalogued and we do not know whether they contained any objects of lapis lazuli.

Mari, on the Euphrates, which in E.D. III appears to have been governed by Semitic rulers, was nonetheless an outpost of Sumerian civilisation and, in this latter respect, was comparable to the city of Ashur H. A row of columns, the emergence of which is a distinctive hallmark of E.D. II architecture, see p. 55, decorates the courtyard of Ishtar Temple C at Mari. The many foundation deposits of Ishtar C, the fourth rebuilding of the temple, invariably consisted of bronze nails and two rectangular tablets, one of lapis lazuli, the other of alabaster.<sup>2</sup>

It is in E.D. III that the greatest wealth of lapis lazuli has been found, principally in Woolley's famous Royal Tombs and Death Pits at Ur. Nearly 2,000 graves were excavated in the Royal Cemetery but of these a proportion were subsequent to Early Dynastic, belonging to the Akkadian and Third Dynasty of Ur periods.

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(1) P.R.S. Moorey, "A Reconsideration of the Excavations on Tell Ingharra (East Kish)", Iraq XXVIII, pp. 41-3.

(2) A. Parrot, M.A.M. I, p. 52 ff.

There is a case for arguing that the earlier tombs in the Royal Cemetery may be assigned to E.D. II. The lines of demarcation are not rigid and it is easier, on the whole, to accept Harriet Crawford's contention that the bulk of them belong to E.D. III. In her thesis she claims that some tombs were dug into E.D. II rubbish,<sup>1</sup> but we have already noted that SIS IV into which they were dug contained E.D. I impressions (see p. 54).

Briefly, the principal arguments used for advocating the commencement of the Royal Cemetery in E.D. II are:

1. Analogies between some Ur tombs and the Kish Y Chariot burials. Moorey, however, has suggested that the Kish tombs should be assigned at the earliest to the very end of E.D. II or, more probably, to III.<sup>2</sup>
2. Analogies between the Royal Cemetery and Sin IX. The excavators suggested that Sin IX continued into E.D. III and Professor Mallowan has now assigned the whole of it to that period.<sup>3</sup>
3. Analogies are also drawn between Sin VIII, a level assigned to E.D. II, and the Royal Cemetery. A severe and abstract representation of a bull's head, cast in copper, was found buried in a wall of Sin IX, a context attributed by the excavators to the previous building period, VIII.<sup>4</sup> This head<sup>5</sup> is most closely comparable with the copper head, U.12435, from Ur.<sup>6</sup> The Ur specimen, however, shows a wealth of detail, such as curls on the crown, and heavy folds over the eyes and around the base of the ears, which contrasts strongly with the stark

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- (1) H. Crawford, thesis, p. 49.
  - (2) P.R.S. Moorey, Iraq XXVIII, pp. 41-43.
  - (3) M.E.L. Mallowan, forthcoming fascicule in C.A.H. I.
  - (4) Delougaz and Lloyd, O.I.P. LVIII, p. 69.
  - (5) H. Frankfort, Sculpture of the Third Millennium B.C. from Tell Asmar and Khafajah, p. 42, Pl. 104, no. 184.
  - (6) U.E. II, Plates 116 and 117.

simplicity of the Khafajah head and which suggests a later date for the Ur piece. The provenance of the Ur bull's head supports our stylistic hypothesis of non-contemporaneity. It was found in Death Pit PG 1332. Among other items this tomb contained a shell cylinder seal, U.12433,<sup>1</sup> which depicts a typical E.D. III banqueting scene and the provenance cannot therefore be assigned to an earlier time.

There appears to be insufficient evidence for advocating an E.D. II date for any Royal Cemetery grave, particularly as the culture of these early tombs is closely homogeneous and as the divisions between periods lack definition.

The terminal date for the graves is provided by extensive building remains of the Third Dynasty of Ur, under which some of the royal tombs lie. This particularly applies to the annexe which Amar-Suen (formerly known as Bur-Sin) built to the Mausoleum of Shulgi (once known as Dungi), which overlies some of the graves. No royal tomb can therefore be later than the middle of the Third Dynasty.<sup>2</sup>

Woolley divided the graves of the Royal Cemetery into three groups on typological and stratigraphic evidence: the Pre-dynastic, which included the E.D. III Royal Tombs; the Second Dynasty, which he claimed fell between the Pre-dynastic and the third group, the Sargonid cemetery. Woolley was writing, however, before the main lines of glyptic and pottery typology had been worked out; with the help of the new data it is sometimes possible to redate some of his graves. The sequence dating of the richest and most

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(1) U.E. II, Pl. 194, no. 31.

(2) B. Buchanan, "The Date of the So-Called Second Dynasty Graves of the Royal Cemetery at Ur", J.A.O.S. 74, p. 149.

important tombs, the Royal Tombs and Death Pits, is not, however, affected.

In his valuable article, Briggs Buchanan pointed out that some Pre-dynastic graves contain seals of Akkadian or even Post-Akkadian date; that the so-called "Second Dynasty" graves belong in the main to the Third Dynasty of Ur; and that some Akkadian or Sargonid graves also belong to Ur III.<sup>1</sup>

Of the 1,850 graves which Woolley lists in his tabular analysis,<sup>2</sup> as many as 313 are described as being equipped with objects of lapis lazuli. Some 71 of these do not contain any easily datable objects, such as seals or pottery, and will therefore have to be omitted from this thesis.<sup>3</sup> Of the remaining 242 tombs which have a grave gift of lapis lazuli and contain seals or pottery as evidence for dating, Briggs Buchanan has assigned 52 to the Akkadian and

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(1) Buchanan, J.A.O.S. 74, pp. 147-153.

(2) U.E. II, pp. 412-509.

(3) Graves in the Royal Cemetery containing lapis lazuli objects, but lacking dating criteria:  
From the Pre-dynastic Cemetery -  
PG 57, 161, 181, 241, 248, 260, 303, 317, 332, 354, 358, 365, 405, 428, 453, 495, 513, 568, 718, 723, 737, 758, 823, 851, 902, 1040, 1065, 1066, 1075, 1087, 1100, 1104, 1109, 1116, 1142, 1150, 1157, 1167, 1266, 1290, 1314, 1316, 1320, 1329, 1401, 1402, 1408, 1414, 1503, 1534, 1608, 1609, 1628, 1634, 1666, 1726, 1738, 1744, 1759.  
From the Sargonid cemetery -  
PG 439, 479, 504, 524, 554, 852, 1006, 1183, 1284, 1334, 1335, 1366.

Post-Akkadian eras on the glyptic evidence.<sup>1</sup> It must here be noted that some of the seals he assigns to the Post-Akkadian period could equally well belong to the Akkadian period (for some of these disputed seals see Pl. 39, nos. 10 to 21). Many of the figures on these seals are shown wearing a distinctive knob or "chignon" at the back of the head. This hairstyle is considered by Miss Barbara Parker as characteristic of the Akkadian period and not a feature which continues into Ur III. A fine Akkadian seal showing the "chignon" is that of Daguna (Pl. 36, 1).

Other seals of Buchanan's Post-Akkadian group can definitely be assigned to the Third Dynasty of Ur and his Post-Akkadian graves should therefore be divided into those of a definite Ur III date, and those less certainly dated, which are known not to be earlier than Akkadian.

Since a grave containing an Akkadian or Post-Akkadian seal cannot be earlier than those periods, the associated

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- (1) See Buchanan, J.A.O.S. 74, pp. 147-153: redated graves from Ur:

Predynastic Graves dated to the Akkadian era  
PG 143, 395, 535, 543, 544, 549, 559, 563A, 681,  
686, 697, 717, 724, 726, 796, 861, 1173, 1276.

Predynastic graves dated to the Post-Akkadian period  
PG 35, 323, 345, 397, 689, 867.

"Second Dynasty" Graves dated to the Akkadian era  
PG 695, 735, 871.

"Second Dynasty" Graves dated to Ur III, prior to the reign of Amar-Suen  
PG 1422, 1845, 1847, 1849, 1850 (to reign of Shulgi).

Sargonid graves to Late Akkadian  
PG 506, 540, 647, 673.

Sargonid graves to Post-Akkadian  
PG 435, 671, 704, 825, 963, 973, 985, 986, 991, 1003,  
1012, 1067, 1092, 1094, 1095, 1205.

pottery may, with some certainty, be accepted as the vessels in use at the time of the burial. Following these principles, the pottery chart shown in Appendix A was compiled from lists of the pot-types occurring in:

1. Tombs which can definitely be assigned to E.D. III, i.e. the "Royal" tombs and "Death Pits".<sup>1</sup>
2. Pottery from graves with Ur Pot Type 16, which is comparable with Delougaz' "Proto-Imperial" cup,<sup>2</sup> and may therefore be assigned to the end of E.D. III.
3. Buchanan's Akkadian tombs, see note on preceding page.
4. Buchanan's Post-Akkadian tombs, some of which may still be Akkadian, see preceding page and note.
5. Buchanan's early Third Ur tombs from the "Second Dynasty" cemetery, see note on preceding page.

As is shown by the chart (Appendix A), some of the pot-types continue in use from E.D. III to Ur III, without a break, e.g. Types 4, 5, 21, 108, etc., while others occur from E.D. III to Akkadian, or are exclusive to one or other period. Where parallels exist with Diyala vessels, these have been mentioned on the chart. It will, however, be noticed that a pot in the Diyala need not necessarily be contemporary with the same type at Ur, a point that has already been made above (pp. 44-45). To quote a few of the examples shown on the chart: R.C. type 4 continues in use

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- (1) Royal Tombs and Death Pits in the Pre-dynastic cemetery:  
PG 337, 580, 777, 779, 789, 800, 1050, 1054, 1232, 1236, 1237, 1332, 1618, 1631, 1648.
  - (2) Delougaz, O.I.F. LXIII, p. 146, note 134: and see p. 65 above.

at Ur from E.D. III to Ur III, while at the Diyala it was found in provenances dated only to E.D. III to "Proto-Imperial";<sup>1</sup> again R.C. 50 occurs in Akkadian to Ur III graves, while in the Diyala it is found in E.D. III levels, and so on. Just as some similar vessels do not appear in contemporary provenances on the Diyala and at Ur, there are equally others which are in use at the same time at the two sites - for instance R.C. Type 29,<sup>2</sup> R.C. 44,<sup>3</sup> and R.C. 224<sup>4</sup> to name a few.

Before leaving this chart of dated pottery, there is one more point to be made. It has been accepted that the fruitstand or "champagne cup" is a distinctive ware of E.D. II and III. There is now reason to believe that it continued in use until at least the Early Akkadian period. The principal evidence for this is its occurrence in the Red Stratum graves at Kish. Moorey has suggested that the Red Stratum graves are not earlier than Early Akkadian.<sup>5</sup> Indeed Red Stratum grave 306 is equipped with a lapis lazuli seal (Pl. 36, 2), which shows a scene typically Akkadian in both style and subject.<sup>6</sup> At Ur also one of these vessels occurs in a tomb, PG 383, with a seal, U.8646,

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(1) Delougaz, O.I.F. LXIII, Pl. 96a.

(2) Ibid, Pl. 148.

(3) Ibid, Pl. 160.

(4) Ibid, Pl. 163.

(5) P.R.S. Moorey, Iraq XXVIII, p. 30.

(6) Watelin, Excavations at Kish IV, p. 50, Pl. XXXIV.

depicting a late contest frieze, which is closely comparable with Early Akkadian seals.<sup>1</sup>

Combining the evidence of the dated pottery chart and the stylistic evidence of the seals, an analysis (Appendix B) of the 242 tombs in the Royal Cemetery which contain lapis lazuli grave goods has been attempted. The tomb pottery when compared with the pottery chart (Appendix A) frequently suggests a period or periods to which the grave may belong: the glyptic evidence<sup>2</sup> is also, where possible, placed in context. If the evidence of pottery and seals is inconclusive, a further indication of period may sometimes be given by the beads. While, as Woolley observes,<sup>3</sup> beads are not very satisfactory dating criteria, as they can continue in use for many centuries, none-the-less certain types are specifically datable. The jewellery of the Early Dynastic Royal Tombs is distinctive, as also are the materials. Characteristic of the Royal Tombs are the "wreaths", "dog-collars" and high hair combs (see p. 26 and Pls. 14-15): these are usually made from a combination of lapis lazuli, carnelian and gold, although silver is also common. During the later Akkadian and Post-Akkadian eras, although lapis lazuli remained a favoured material, a wealth of new stones

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(1) Compare U.E. II, Pl. 204, no. 164, with C.A.N.E.S. I, nos. 131-136.

(2) To determine period, seals were compared with those illustrated in such works as C.A.N.E.S. I and H. Frankfort, Cylinder Seals

(3) U.E. II, p. 371.

was also used. The symmetrical compositions of the Early Dynastic period were out of fashion and a love of variety resulted in the use of a medley of materials and shapes.

A few instances of different stones in the Early Dynastic cemetery do occur, for instance Queen Pu'abi's (Shub'ad) fine string of agate beads, but these are rare and are usually confined to a single, or at the most two, examples of the atypical stones.

The results of the analysis of these 242 graves attempted in Appendix B are as follows: some 95 tombs have been assigned to Early Dynastic III, while 106 belong to later periods, the Akkadian, Post-Akkadian and Third Dynasty.

It is possible to check the correctness of our reassignment of some of these tombs, if they happen to be listed in Woolley's groups of graves lying vertically on top of or cutting into one another.<sup>1</sup> This method, which should be foolproof, is unfortunately not, for the field conditions under which the ordinary graves were plotted, mostly by magnetic compass, were difficult. The occasional errors in grouping are illustrated in Woolley's Group 4: in this PG 1422, dated by internal glyptic to Ur III (see Appendix B), lies below PG 1407, a grave assigned to E.D. III. Similarly a lesser error is made in Group 9, where Akkadian PG 1405 lies over Post-Akkadian PG 973 and Early Dynastic PG 1136: and, again in Group 25, a Middle Akkadian grave,

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(1) U.E. II, Appendix B, pp. 510-511.

PG 861, overlies Post-Akkadian PG 867. While these three groups appear to be subject to error, there are a greater number which bear out the new datings. The careful recording of the excavators is particularly well shown in Group 22. Here an Akkadian-Post Akkadian grave, PG 672, lies over a Late Akkadian grave, PG 695, which in its turn is above an Early Akkadian tomb, PG 724. Other groups which bear out the new datings are Groups 7, 10, 12, 16, 24, 27 and 32.<sup>1</sup>

All except one of the 95 Early Dynastic graves occur in the Pre-dynastic cemetery, in which only 45 graves are late. If it were needed, this is an additional testimony to Woolley's original analysis. As said before, no Royal Tomb or Death Pit has been affected by this study.

The practice during the Early Dynastic period of burying the most important members of society - the rulers or priests - accompanied by richly-attired retinues of courtiers, musicians, attendants, soldiers and charioteers, has preserved a fantastic array of wealth and vividly presents a picture of a civilisation with a high culture and advanced technology. The luxurious gifts with which the principal occupant of the tomb and his or her retainers were endowed shows a city at the height of its powers. It was during

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- (1) Group 7: Akkadian PG 1045 over E.D. PG 1133;  
Group 10: Post-Akk. PG 991 and PG 985 over E.D. PG 1136;  
Group 12: Post-Akk. PG 963 over E.D. PG 1043;  
Group 16: Post-Akk. PG 1205 over E.D. PG 1216;  
Group 24: Akk.-Post-Akk. PG 609 over Akk. PG 635;  
Group 27: Post-Akk. PG 747 over E.D. PG 792;  
Group 32: Post-Akk. PG 991 and PG 1012 over Akk.-  
Post-Akk. PG 1163.

Early Dynastic III that the city of Ur held for a time the kingship over Sumer and this would amply account for the city's prosperity. Trade in metals and precious stones must have been extensive and well-organized, for at no other time in Mesopotamia has so great a quantity of luxury goods been found.

Not only Ur achieved prosperity in E.D. III: the nearby city of Kish was also of importance and it was from Kish that Ur had wrested the kingship.

The Y Cemetery at Kish, which is assigned to E.D. I-II, was buried under a great Flood Stratum. This flood is described by Watelin as "one of the greatest and longest floods which occurred in the history of ancient Kish",<sup>1</sup> and it caused a temporary break in the occupation of the site.

After this flood the occupants of Kish undertook a heavy programme of rebuilding and constructed the ziggurat in the Ingharra sounding, Palace A with its free-standing pillars and the Plano-Convex building.<sup>2</sup> Moorey considers that these buildings were erected early in E.D. III.<sup>3</sup> Cemetery A was dug into the ruins of Palace A<sup>4</sup> and cannot therefore be earlier than the second half of E.D. III, assuming that Palace A had already fallen into ruin at that time.

Delougaz comments that many of the Kish "A" pot-types are

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- (1) Watelin, Excavations at Kish IV, p. 41.
  - (2) P.R.S. Moorey, "The 'Plano-Convex Building' at Kish and Early Mesopotamian Palaces", Iraq XXVI, pp. 83-98.
  - (3) P.R.S. Moorey, Iraq XXVIII, p. 44.
  - (4) E. Mackay, A Sumerian Palace and the 'A' Cemetery at Kish, Part II, p. 104.

closer to "Proto-Imperial" than to E.D. II or III types at the Diyala,<sup>1</sup> while Harriet Crawford suggests that the cemetery was still in use in the Akkadian period because of the post-E.D. style of glyptic and the occurrence of hammered axes.<sup>2</sup>

The Red Stratum, so called because of its colour, lies above one metre of sterile soil over the flood stratum in the Ingharra sounding.<sup>3</sup> Moorey considers that graves in this Red Stratum are contemporary with the later graves of Cemetery A.<sup>4</sup> A lapis lazuli seal in R.S. Grave 306,<sup>5</sup> referred to before, is clearly Akkadian in style, which further documents the hypothesis that both Cemetery A and the Red Stratum graves continued in use in Akkadian times.

The contents of the 154 Cemetery A graves are unfortunately not itemised, although we are told that one of the most popular materials was lapis lazuli, many amulets being made of it. Other materials included carnelian, jasper, porphyry, agate, onyx, crystal. The Red Stratum graves are also poorly recorded. We are therefore unable to separate any Early Dynastic graves from those of the Akkadian period.

R.S. Grave 306 (see above) contained a necklace of mixed materials including carnelian, lapis, agate and onyx,

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- (1) Delougaz, O.I.P. LXIII, p. 146.
  - (2) H. Crawford, thesis, p. 45.
  - (3) Watelin, Excavations at Kish IV, p. 41 and p. 53, fig.7.
  - (4) P.R.S. Moorey, Iraq XXVIII, p. 30.
  - (5) Watelin, Excavations at Kish IV, p. 50, Pl. XXXIV, 3: Collection Mrs. Moore, p. 45, Pl. V, 37.

and this variety would alone suggest a post-E.D. III date for the tomb, even if it did not contain an Akkadian seal. The tomb was equipped with "champagne" cups and a jar with a "mother goddess" handle, attesting to their continued use in Akkadian times.

R.S. Grave 344 was equipped with a seal<sup>1</sup> of E.D. III style and also contained a crude and ungainly copy of a "dog collar" necklace of lapis lazuli.

Another important centre during Early Dynastic III was the distant outpost of Sumerian civilisation, Semitic Mari, on the middle Euphrates. One of the most exciting of recent discoveries there is a treasure sent by Mes-anni-padda to the king of Mari (see p. 63).

Both Ishtar Temple B, which was a reconstruction of C, and the sixth and last Temple A, are assigned to E.D. III. In Ishtar B the pottery was frequently encrusted with lapis lazuli,<sup>2</sup> and many amulets were carved from the stone, including the two shown on Plate 19, 1-2.

In the final phase, Ishtar A, pieces of lapis lazuli, gold and shell were mixed in the bricks of the walls of Cella 18,<sup>3</sup> thus dedicating the raw material to the gods. The jewellery of the period was also often of lapis lazuli,<sup>4</sup> as were the inlaid eyes of the many sculptures of Ishtar A.<sup>5</sup>

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(1) Watelin, Excavations at Kish IV, Pl. XXXV.

(2) A. Parrot, M.A.M. I, p. 28, Pl. LXXI.

(3) Ibid, p. 37.

(4) Ibid, p. 160 ff.

(5) Ibid, p. 70-92.

The "treasure" of Mari, given by Mesannipadda of Ur to Anshud of Mari (see p. 63), contains many beads and amulets of lapis lazuli as well as the lapis lazuli eagle (Pl. 20, 1) referred to above. One of the beads bore an inscription identifying the treasure as the gift of Mesannipadda to Anshud.<sup>1</sup> The beads were often large in size and elaborately shaped, for instance fluted double conoids capped in gold and long faceted dates. There were a number of cylinder seals in the treasure which are at present rather poorly photographed and described.

#### Early Dynastic Cylinder Seals

According to the evidence of the seal distribution chart, there are no seals made of lapis lazuli which carry the distinctive E.D. I Brocade Style designs (see p. 68) but by E.D. II the stone was again in use. By the final phase, III, lapis lazuli achieved its greatest popularity and over a hundred seals of the period are known. Of these more than forty came from the wealthy site of Ur.

The principal theme of the E.D. II lapis lazuli seals are contests of animals and humans, usually shown in a continuous frieze (Pl. 30, 2), although these may at times show signs of symmetry or centred arrangement (Pl. 30, 1, 3 and 5). In the fine Ashmolean seal shown on Plate 30, 3, a typical E.D. II contest is placed over a design reminiscent of the

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(1) A. Parrot, Syria XLII, p. 220.

Jemdat Nasr period. Scenes around a spread eagle, a favourite motif in E.D. III, are already occurring (Pl. 31, 1, 3 and 4), as are banquet scenes (Pl. 31, 2). Distinctive elements of technique are the linear detail and outline treatment of heads as seen in Pl. 30, 2 and 5, although towards the end of the period there is a tendency to greater relief (Pl. 30, 1).

The familiar E.D. III repertoire includes banqueting and contest scenes. A large number of superb banqueting seals have been found at Ur (Pls. 32-33), no less than three coming from the tomb of Pu'abi (Shub'ad), PG 800 (Pl. 32, 1, 2 and 4). These designs usually occupy two registers, although one of the registers may depict contest scenes (Pl. 33, 11-14), spread eagle designs (Pl. 32, 11: Pl. 33, 7-10) or rows of animals (Pl. 33, 15 and 16).

Contest scenes are shown in one, two or occasionally even three (Pl. 35, 10) registers. The frequent 'crossing' of animals appears on the whole to be an early feature (Pl. 35, 3) which has to decrease with the greater emphasis on modelling later in the period. In the latest examples, almost indistinguishable from Early Akkadian examples, most of the figures are upright, heavy in form and often shown full-face (compare Pl. 34, 12-13 with Pl. 38, 14).

Pl. 35, 4 illustrates the impression of the seal of Nin-tur-nin, wife of Mesannipadda, and can therefore be placed historically near the beginning of the period. However, in its upper register, it already shows the beginning of a

typical late feature - that is a connection at shoulder height between the central human and his two opposed animal contestants. This shoulder connection, which also forces heads to be on the same level, can be seen in a more emphatic form on Pl. 34, 9-11 and is also a feature of Akkadian contest scenes (Pl. 38, 2-9), seals of the two periods seeming to overlap.

Another distinctive type of E.D. III contest scene inverts a sheep between two lions (Pl. 34, 1 and 4), thus diminishing the need for crossing animals without sacrificing the close frieze-like texture.

Two characteristic elements of the period are the attacking lion with head slightly turned and full-face, not in profile as on Akkadian seals, and the man with the "cocks-comb" hair-style.

Other E.D. III subjects include rows of animals (Pl. 35, 2), browsing bulls (Pl. 35, 1) and presentation scenes (Pl. 35, 11).

Buchanan has recently suggested that there may be yet another class of E.D. III seal, an adaptation of the Jemdat Nasr geometric design.<sup>1</sup> So many seals engraved with geometric designs have been found in E.D. III or later contexts<sup>2</sup> that the question must be asked - were they all survivals or were they still being produced? Further evidence is required

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(1) Ashmolean I, pp. 41 and 134.

(2) For instance Seal U.8339 in PG 209; U.8420 in PG 226; U.11488 in PG 1027; U.11899 in PG 1172, etc.

before an answer can be found.

To sum up, therefore, we have found that large quantities of lapis lazuli were employed in the Early Dynastic III period, for numerous and often massive necklaces, for cylinder seals and amulets, for inlay work of all kinds, for cups, for dagger handles and for whetstones. At no other time was the stone in such abundant supply and employed for so many different purposes. To obtain all their materials the Mesopotamian city states must have been internally strong with administrators of particular effectiveness, who employed merchants of initiative.

This well-organized trade, destined to be so effectively exploited in E.D. III, had only been restarted in E.D. II, perhaps by Enmerkar, whose feat was long remembered in epic form (see pp. 58-59), after the apparent cessation of supplies in E.D. I (see p. 69).

### The Akkadian Period

The history of the kings of Agade is well known and requires only a brief description here. The founder of the dynasty began life as cup-bearer to Ur-zababa, king of Kish. From this humble origin, Sargon went on to conquer many lands and to form the first empire, which he controlled for some 56 years (2371-2316 B.C.).<sup>1</sup> He ruled from the Upper to the Lower Seas; he subjected Elam and all the

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(1) H. Saggs, The Greatness That Was Babylon, p. 532, Chronological Table II.

mountainous country of south west Persia; he may even have conquered Cyprus. One of his expeditions, preserved in legend, was to relieve a merchant colony in Purushkhanda from oppression, after it had appealed for help. The road there was full of hazards, encumbered, according to the legend, with blocks of lapis lazuli and gold, and by forests and thickets.<sup>1</sup> But Sargon succeeded in overcoming these and rescued the merchants.<sup>2</sup> Purushkhanda lies near Kayseri in Cappadocia, not far from the later Assyrian merchant colony at Kültepe, the ancient Kanesh.<sup>2</sup>

Among the inducements which made Sargon undertake this mission was doubtless the possibility of securing some tin, a metal needed for the formation of bronze. Later in the Akkadian period supplies of tin failed and weapons had to be made of copper, a disaster for an empire which needed to maintain itself by force of arms.<sup>3</sup>

Early in his reign Sargon founded a new city from which to rule, the city of Agade on the Euphrates. At its quays, Sargon proudly proclaimed, were moored ships from Makkan, Meluhha and Tilmun.<sup>4</sup> These ships attest the existence of a flourishing sea-borne commerce with the East.<sup>5</sup> Fragments of

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(1) C.J. Gadd, "The Dynasty of Agade and the Gutian Invasion", C.A.H. I, Ch. XIX, p. 13; E.F. Weidner, "Der Zug Sargons von Akkad nach Kleinasien", Boghazköi-Studien 6, p. 65; R. Campbell Thompson, A Dictionary of Assyrian Botany, p. 303, records that Mount Galashu (? Galatia) affords lapis and gold.

(2) C.J. Gadd, C.A.H. I, Ch. XIX, pp. 12-13.

(3) H. Crawford, thesis, p. 61 and p. 98.

(4) For situation of Makkan, Meluhha and Tilmun, M.E.L. Mallowan, Iran III, pp. 2-4.

(5) A.L. Oppenheim, "Sea-faring Merchants of Ur", JAOS 74, p.15.

the epic, The Curse of Agade, tell of a capital which had benefited fully from the free trade within the empire. The treasury was filled with an abundance of precious metals and stones.<sup>1</sup> Today Agade is lost, doubtless buried under deep deposits of river silt, which overlie the district of Babylon, for there are indications that Agade lay in its neighbourhood. Full knowledge of the glories of the Akkadian era can only be completed when Agade has been excavated.

It is probable that the first of the many revolts, which were continually to harry the empire, broke out before the death of Sargon. His two sons and successors, Rimush (2315-2307) and Manishtusu (2306-2292), who only reigned in all some 24 years, spent much of their time resubduing their father's former vassals. Among those Rimush had to subdue was Kaku, last king of the II Dynasty of Ur,<sup>2</sup>

It is with the grand-son of Sargon, Naran-Sin (2291-2255), that the empire once again reached new heights of power and prosperity. Later ages venerated Sargon and Naran-Sin as mighty warriors and monarchs, and Naram-Sin, even in his lifetime, assumed divine privileges.

Naram-Sin also had to contend with widespread revolts on his accession, but, having suppressed these, he remained on the throne for some 37 years. He too is recorded as having reached the distant vassal-state of Purushkhanda. It is also claimed that he fought and defeated Manium, king

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(1) S.N. Kramer, From the Tablets of Sumer, p. 268.

(2) C.J. Gadd, C.A.H. I, Ch. XIX, p. 21.

of Makkan, and that he sought for the hard woods of Western Iran. Among his many achievements was the building of a mighty frontier palace fortress at Tell Brak,<sup>1</sup> which guarded trade and communications, particularly the all-important tin-route. Another important architectural achievement was a similar palace fortress at Ashur.

However, before his reign ended, Akkadian hegemony was totally broken. The Iranian Gutti mountaineers began their incursions into Sumer and Akkad, which were to destroy all centralized control for over a century. Shar-kali-shari (2254-2230) succeeded Naram-Sin, and in his reign the empire finally collapsed. Akkadian rulers continued nominally to reign for the next 30 years, but held minimal power.

As H. Crawford has demonstrated in her thesis, it was only towards the end of the Akkadian era that tin supplies failed and axes were hammered in copper, instead of being cast in bronze, not, as formerly believed, throughout the period. Trade until the time of Naram-Sin's defeat must have been well-organized and far-ranging. Many "Indian" goods, such as etched carnelian beads and Indianesque seals are proof of a far-distant trade in which the Persian Gulf played an important part. We are told of the luxuries imported from Makkan and Meluhha and of the use of cedars of Lebanon.

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(1) M.E.L. Mallowan, "Excavations at Brak and Chagar Bazar", Iraq IX, p. 1 ff.

The art of the Akkadian period reached a high degree of excellence. Perhaps one of the most famous examples is the sensitive bronze head from Nineveh, which may portray Sargon himself. The best Akkadian seals achieve a refreshing breakaway from the Early Dynastic frieze-designs, which had tended to become repetitive and crowded. Space is once again an integral part of design, used to balance the greater plasticity and force of the figures. Mythological representations and animal contests are the usual subjects.

#### Lapis Lazuli in Akkadian Levels

As is to be expected at a time when many petty kingdoms and principalities were unified, trade and communications overcame territorial obstacles and the lapis lazuli trade, so well organized in E.D. III, remained prosperous. In the epic the Curse of Agade, we are told that the buildings of the city "were filled with gold, silver, copper, tin and lapis lazuli. ... To it came the nomadic Martu, the people who "know not grain", from the West, bringing choice oxen and sheep; to it came Meluhhaites, "the people of the black land", bringing their exotic ware; to it came Elamite and Subarean from the East and North carrying loads like "load-carrying asses" ...".<sup>1</sup>

Akkadian levels and remains have been found at many Mesopotamian sites including Ur, Kish and the Diyala; in what is later known as Assyria, at Ashur, Nineveh, Tepe Gawra

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(1) S.N. Kramer, From the Tablets of Sumer, Appendix A, p. 268.

and Nuzi; and in Syria at the fortress of Tell Brak.

Ur had been a city of considerable importance in E.D. III, during a part of which it held the kingship over Sumer. With the building of Agade and the centralization of administration on the new capital, the importance of Ur must have been considerably diminished, although during the reign of Sargon some royal interest was shown, as his daughter Enkheduanna was installed as High Priestess of the Moon God.<sup>1</sup> A damaged alabaster disc found at Ur illustrates her participating in one of the temple ceremonies.<sup>2</sup>

During the reign of Rimush, Kaku, the last king of the Second Dynasty, led a revolt against his Akkadian overlord (see p. 88). Kaku was captured and his city rendered defenceless by having its walls dismantled,<sup>3</sup> a disaster for Ur.

The architectural remains of the period have been overlaid and in some places destroyed by the greater splendour of the Third Dynasty. There are however a large number of burials from Woolley's Royal Cemetery which can be assigned to the period: 32 graves from his Predynastic cemetery,<sup>4</sup>

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(1) U.E. II, p. 209 and pp. 311-312.

(2) C.E. Woolley, The Development of Sumerian Art, p. 97, Pl. 54 b.

(3) C.J. Gadd, C.A.H. I, Ch. XIX, p. 21.

(4) See Appendix B:

PG 184, 202, 219, 319, 369, 395, 482, 535, 543, 544, 549, 559, 563A, 655, 681, 686, 697, 717, 724, 726, 780, 796, 822, 861, 1070, 1173, 1276, 1318, 1327, 1398, 1405, 1646.

3 from his "Second Dynasty" cemetery<sup>1</sup> and 23 from the Sargonid cemetery,<sup>2</sup> giving a total of 58 graves. There is, therefore, at Ur more evidence of the burial customs of the Akkadian period than anywhere else. The burials are simple and contain only a single body. Coffins of wickerwork or thin planks filled nearly the whole area of the shafts and the burials were endowed with only modest gifts.<sup>3</sup> This contrasts strongly with the customs of both the preceding and succeeding generations. In the Early Dynastic period, as we have already said, there were many multiple burials, all the interns of which were luxuriously equipped: a similar but perhaps less lavish practice obtained again in Ur III. It therefore appears that during the Akkadian period royalty was no longer buried at Ur.

Even if the graves were poor, nonetheless many of them were equipped with necklaces of lapis beads and with seals of lapis lazuli (see Appendix B).

As noted before (see pp. 81-82), the Red Stratum graves and the Cemetery A at Kish, begun in E.D. III, continued in use in Akkadian times. Lapis lazuli was a popular material for the carving of both beads and amulets there.<sup>4</sup>

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(1) See Appendix B:  
PG 695, 735, 871.

(2) See Appendix B:  
PG 67, 384, 401, 445, 484, 496, 503, 506, 540, 576,  
635, 647, 673, 699, 703, 848, 859, 968, 1002, 1045,  
1154, 1213, 1379.

(3) Descriptions of Pre-dynastic PG 543, 697 and 780,  
U.E. II, pp. 151-160, reassigned to the Akkadian  
period, see Appendix B.

(4) E. Mackay, A Sumerian Palace and the 'A' Cemetery at  
Kish, Part II, p. 185.

Lapis lazuli was also probably used for similar purposes on the Diyala - the relevant publication has not yet appeared - and it was certainly employed for the carving of cylinder seals.<sup>1</sup>

A necklace of carnelian, lapis lazuli and rock crystal was found in the Treasure Pot from Gawra VI,<sup>2</sup> a level assigned to the Akkadian era on account of its seals: and a single bead of lapis lazuli occurred in the Ga-Sur levels at Nuzi,<sup>3</sup> which are similarly dated. No other objects of lapis lazuli appear to have been found in Akkadian levels in Assyrian sites, Nineveh, or Ashur, Ishtar Temple G.

Outside Mesopotamia proper, lapis lazuli has been found at Naram-Sin's great frontier fortress of Tell Brak. A piece of lapis lazuli inlay in the form of a beard<sup>4</sup> was found in the debris of the Akkadian palace,<sup>5</sup> while a lapis lazuli bull amulet was found in the packing of Court 1 after the destruction of the Sargonid houses.<sup>6</sup> Both of these could be archaic for they can be closely matched in Early Dynastic Ur. A hoard buried in a clay vase in

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- (1) H. Frankfort, O.I.P. LXXII, seal nos. 644, 674, 685, 686, 769.
  - (2) E.A. Speiser, Excavations at Tepe Gawra I, pp. 134-5.
  - (3) R.F.S. Starr, Nuzi I, p. 380.
  - (4) For discussion of beards of lapis lazuli see p. 32.
  - (5) M.E.L. Mallowan, "Excavations at Brak and Chagar Bazar", Iraq IX, pp. 66, 114, Pl. XV, no. 9.
  - (6) Ibid, p. 113, Pl. XV, 4.

sub-surface soil of Sargonid houses dates typologically to Akkadian but stratigraphically to the very end of that period. There were many lapis lazuli beads in the hoard.<sup>1</sup>

The apparent decline in the quality of the jewellery during the Agade period may well be attributed to the absence of royal burials at any of the excavated sites. As noted above, Akkadian burials at Ur contain only one body, usually just wrapped in a mat and equipped with simple gifts. The deceased is no longer given the elaborate "dog-collars", "wreaths", "brims", combs etc., of the royal Early Dynastic tombs. The necklaces are formed from a variety of materials including lapis lazuli, and carved into a number of familiar shapes. Beads are often tiny in size and types include rings, barrels, double conoids, balls, both plain and fluted, dates, lozenges, diamonds, etc. On the whole the more complex beads with elaborate facetting tend to disappear.

At Kish the excavators made a surprising statement that none of the lapis lazuli beads and amulets found plentifully in Cemetery A and the Red Stratum graves is well finished: they "are generally badly cut, badly shaped and show little attempt at polish".<sup>2</sup> The harder carnelian beads are, however, finely worked.

The most usual forms for lapis beads at Kish are truncated double conoids and barrels, although squares,

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(1) M.E.L. Mallowan, Iraq IX, pp. 177-8, Pl. XXXV.

(2) E. Mackay, A Sumerian Palace and the 'A' Cemetery at Kish, Part II, p. 185.

balls, cylinders and discs are also used.<sup>1</sup> Another form is a crude copy of the nearly triangular "dog-collar" bead, with several perforations.<sup>2</sup> These acted as dividers between strings of smaller beads.

The beads found near the "Treasure Pot" from Gawra are formed from a medley of carnelian, lapis lazuli, agate and rock crystal, carved into the usual forms - double conoids, barrels, cylinders and fluted and plain balls.<sup>3</sup>

At Brak the forms of lapis beads include tubular, barrel, spherical, double conoid and discs.<sup>4</sup> One necklace consists of two rows of small beads separated at intervals by gold coil pendants,<sup>4</sup> a feature similar in appearance to an Early Dynastic example from Ur.<sup>5</sup> The Brak example is formed of four coils of gold wire, alternatively plain and twisted, while the earlier Ur example simply employs metal rings (Pl. 16, row 1). The terminals of the Brak necklace consist of lapis beads of an unusual shape - serrated discs engraved with a seven-pointed stellar design.<sup>4</sup>

#### Cylinder Seals

Lapis lazuli maintained its popularity as a material for seals during the Akkadian period, over 90 being recorded on the seal distribution chart, 50 of which came from Ur.<sup>6</sup>

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- (1) E. Mackay, Report on the Excavations of the 'A' Cemetery at Kish, Part I, pp. 53-6.
  - (2) Ibid, Pl. VII, 2 and Part II, Pl. IX.
  - (3) E.A. Speiser, "Preliminary Excavations at Tepe Gawra", A.A.S.O.R. IX, p. 36, Pl. 79 bottom row.
  - (4) M.E.L. Mallowan, Iraq IX, pp. 177-8, Pl. XXXV.
  - (5) U.E. II, Pl. 135, U.11558.
  - (6) See Appendix C.

The best Akkadian seals are often superb artistic achievements, employing great plasticity. They are well composed with ample space between the powerful figures. The Berlin seal (Pl. 36, 3) is sensitively carved: the fury of the lion contrasts with the calm of the goddess and her attendant. The muscles of the kneeling man's legs are carefully delineated.

The seal of Daguna (Pl. 36, 1) shows the presentation scene, so frequently to be depicted in later times. As noted before (p. 74), the chignon worn by the attendants is considered to be characteristic of Agade seals. Less well worked presentation scenes can be seen on Plate 36, 5-9 and Pl. 39, 10-18. The dating of the latter group is uncertain, they may be Akkadian or Post-Akkadian.

The seal shown on Plate 36, 2 comes from a Red Stratum grave at Kish and illustrates a mythological scene, as does Plate 36, 4 from Ur.

Contest friezes begun in E.D. II continue to be depicted throughout the Akkadian period. Porada has suggested that their development on approximately chronological lines goes as follows:<sup>1</sup>

1. Connected groups, which began in E.D. III, see pp. 84-5 - Pl. 38, 1-10.
2. Separate groups, a development which may also have begun in E.D. III, see pp. 84-5 - Pl. 38, 11-15 and Pl. 37, 11.
3. Two pairs of contestants. Pl. 37, 1-10, 12, 15 and Pl. 38, 16-17.

Characteristic features are the elongated arm of the hero

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(1) C.A.N.E.S. I, p. 19.

(Pl. 37, 1-12 and 15): the head of the lion held in profile, while the heroes and bulls are usually represented full face with flowing beards (Pl. 36, 3; Pl. 37, 1-7; Pl. 38, 11-17): and the flat 'Kish' cap worn by some heroes (Pl. 38, 16 and 18; Pl. 37, 9, 11 and 15). It should perhaps be noted that the head of the lion on the seal of the servant of the daughter of Sargon (Pl. 38, 18), a seal which must have been carved at the very beginning of the period or just a little earlier, is shown in the typical Early Dynastic pose of turned head presented full face, and not as is usual in the Akkadian period, in profile.

### Conclusions

In Akkadian times there still appears to have been abundant supplies of lapis lazuli, but the purposes for which it was employed may have decreased. It was certainly used for large numbers of seals, mostly for contest and presentation scenes rather than the mythological and heraldic, and for many common types of bead. We do not know whether it was used for inlay, vessels, dagger handles etc. at this time for no royal tombs, a likely provenance, have yet been discovered.

Woolley suggested that there was a decline in the lapis lazuli trade throughout the period:<sup>1</sup> an opinion also followed by Professor Gadd, who, surprisingly, suggests that it "almost vanishes as a material for inlay and ornament and especially

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(1) U.E. II, p. 372.

for cylinder seals, so much favoured before".<sup>1</sup> Woolley's original statement was perhaps inspired by the poverty of the Akkadian graves when compared with the Royal Tombs of the preceding period: a poverty easily explicable by the historical situation of Ur at this time.

With the formation of the first empire under Sargon and again under Naram-Sin, we would expect trade to be stimulated. We are told that the treasuries of Agade were filled with treasures, including much lapis lazuli. As the vital tin trade collapsed towards the end of the period,<sup>2</sup> we might expect the trade in lapis lazuli to be similarly interrupted. Until that time the evidence is that the trade was flourishing.

### The Gutians (c. 2250-2150 B.C.)<sup>3</sup>

Akkadian hegemony was broken towards the end of the reign of Naram-Sin, by the first incursions of the barbaric Gutti, mountaineers from West Iran. They over-ran Babylonia and disrupted all centralized control, although Akkadian kings continued nominally to reign for another 30 years. Little is at present known, either historically or archaeologically, of life in Mesopotamia during the years of Gutti domination, which lasted over a century. The Sumerian King

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(1) C.J. Gadd, C.A.H. I, Ch. XIX, p. 38.

(2) H. Crawford, thesis, p.

(3) Historical summary drawn from C.J. Gadd, C.A.H. I, Ch. XIX, and H. Saggs, The Greatness That Was Babylon, p. 52 ff.

List describes this as a time of anarchy, using the vivid phrase "Who was king, who was not king". And indeed the Gutians are accredited with no less than twenty-one rulers, each having therefore an average reign of only six years. In addition to the Gutti kings, the remnants of the royal family of Agade still claimed to rule, even after the death of Sharkalishari, for another thirty years: the last Akkadian was Shudurul (c. 2200).

The Gutti can only have been in partial control of Babylonia, for it is during their rule that we hear of the increasing importance and prosperity of the kings of Lagash, particularly of Gudea. Gudea lived in considerable state and embarked on extensive trade with foreign countries for luxury goods. He also attacked and defeated neighbouring Anshan and Elam, an act hardly to be tolerated by a strong overlord. The weakness of Gutti rule is further demonstrated by the fact that their sovereignty left little or no mark on either the history or the material culture of Babylonia; and few objects or archaeological levels can definitely be assigned to them. Objects associated with Gudea of Lagash closely resemble those of the Third Dynasty, and we need not expect any marked difference in the style of the Gutian period.

One of the few levels certainly to be dated to Gutian times occurs at Tell Asmar, where the stratum known as Houses III lies underneath one dated by tablets to the Third Dynasty

of Ur and over one containing seal impressions of the last Akkadian, Shudurul.<sup>1</sup> Unfortunately the volume dealing with the private houses has not yet been published, although it is now said to have been sent to press.

Another site with remains of the Gutti period is Ur. Some of the thirty-six graves from the Royal Cemetery which are assigned in Appendix B to Post-Akkadian times (i.e. Gutti and Ur III),<sup>2</sup> probably belong to the Gutti period.<sup>3</sup> Similarly the nearby cemetery at Diqdiqqeh is also dated to Gutti and Third Ur.<sup>4</sup>

Evidence for the use of lapis lazuli in this poorly documented period is slight for at present there is insufficient evidence to determine which of the 36 Post-Akkadian graves<sup>2</sup> in the Royal Cemetery belongs to the Gutti period, although some of them can definitely be assigned to Third Ur. We are therefore unable to decide whether lapis lazuli beads were still in use in Gutti times, either as survivals or as newly worked beads from recently imported stocks of the stone.

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- (1) H. Frankfort, O.I.P. LXXII, p. 33.
  - (2) Some of the graves assigned to Post-Akkadian times on Buchanan's glyptic evidence may be Akkadian, see p. 74. Graves in question are PG 35, 345, 435, 1067, 1094, 704, 1003, 1012, 1095 and 991.
  - (3) The thirty-six graves are:  
Pre-dynastic Cemetery - PG 35, 125, 323, 345, 397, 689, 840, 847 and 1651.  
"Second Dynasty" Cemetery - PG 1422, 1845, 1847, 1849 and 1850.  
"Sargonid" cemetery - PG 414, 435, 489, 516, 671, 704, 747, 825, 963, 973, 985, 986, 991, 1003, 1012, 1067, 1092, 1094, 1095, 1205 and 1383.
  - (4) C.L. Woolley, Antiquaries Journal V, pp. 18-20: and Buchanan, J.A.O.S. 73, p. 227.

Frankfort has suggested that a few seals "executed in a vigorous linear style", which were found in the Guti level of Houses III at Tell Asmar, are Guti seals.<sup>1</sup> Unfortunately none of these are of lapis lazuli. The one lapis seal found in this level<sup>2</sup> is, he suggests, carved in the Akkadian style and it is closely comparable with a seal of the Akkadian period in the Pierpont Morgan collection.<sup>3</sup> Two lapis seals from this collection have, however, been assigned to the Guti period.<sup>4</sup> They are distinguished by a disintegrated Akkad style and deeply incised engraving, which is most obvious in the human faces. Seal no. 254 shows a worshipper carrying a kid and being led by a goddess towards the sun-god, whose foot is placed on a mountain. Seal no. 263 shows another ritual scene.

Thus there is little positive evidence for the use of lapis lazuli in the years of Guti domination, even though Gudea of Lagash records importing the stone.<sup>5</sup> He took pride in his efforts to endow his newly-built temple of E-ninnu with valuables from abroad. It seems probable, therefore, that some lapis lazuli was imported and, with the evidence of Gudea's inscription, we may assume that trade flourished once more, at any rate in Lagash, which was enjoying high prosperity.

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(1) H. Frankfort, O.I.P. LXXII, p. 33.

(2) Ibid, Pl. 64, no. 685.

(3) C.A.N.E.S. I, Pl. XXVII, no. 174.

(4) Ibid, pp. 32-3, nos. 254 and 263, Pls. XL and XLI.

(5) See Chapter III, p. 152.

The Overthrow of the Guti and the Sumerian Renaissance<sup>1</sup>

The civilised inhabitants of ancient Sumer loathed their Guti overlords, uncivilised barbarians, who caused the land to fall into a state of anarchy. They were finally conquered by Utukhegal, lone ruler of the Fifth Dynasty of Uruk, who had succeeded in uniting all the Sumerian city states on the grounds of their common hatred of the Gutian tribes. After his victory Utukhegal denounced the Guti in round terms:<sup>2</sup>

"Gutium, the stinging serpent of the hills, who was the enemy of the gods, who had carried off the kingship of Sumer to the mountains and filled Sumer with evil."

Utukhegal (2120-2113) was to enjoy the fruits of this national victory for only seven years, for in 2113 B.C. the kingship was seized by Ur-nammu, a man he had set up as his deputy in Ur. Ur-nammu (2113-2096) founded the Third Dynasty of Ur, during which Sumer enjoyed considerable prosperity and Sumerian culture achieved a final brief renaissance after centuries of interruption.

The historical records are disappointing when compared with those of other prosperous periods. There is, however, ample compensation in the magnificent archaeological remains and architectural monuments which they bequeathed to the

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- (1) Historical survey based on C.J. Gadd, "Babylonia, c. 2120-1800 B.C.", C.A.H. I, Chapter XXII; and H. Saggs, The Greatness That Was Babylon, p. 55 f.
- (2) C.J. Gadd, C.A.H. I, Ch. XIX, p. 47.

country, many of which are still extant. Ur-nammu and Shulgi completely reorganized the temenos at Ur and at Uruk and built an extensive series of houses which, as much as anything, are tokens of a prosperous townsfolk at this time. We have evidence of their control of Ashur and Simurru, while Susa was a subject city of the period and again evinced the wealthy culture of that Dynasty. A large number of business documents provide evidence of widespread trade: Ur-nammu re-established the sea trade between Makkan and Ur. This was an especially vigorous period of stone sculpture - workshops were busy throughout the land.

Shulgi<sup>1</sup> (2095-2048) was succeeded by his two sons, Amar-Suen<sup>2</sup> (2047-2039), and Shu-Suen<sup>3</sup> (2038-2030). Shu-Suen was much occupied with repelling the incursions of a new wave of Semitic infiltration, the Amurru, against whom he built a massive defensive wall, which was later to prove useless. Abbabashti, priestess of Uruk in Shu-Suen's time, was equipped with magnificent jewellery, including a superb agate necklace and another of carnelian, agate, turquoise, gold and silver. The turquoise may well have been imported from Iran, perhaps from Nishapur, a city not far from Tepe Hissar.

Ibbi-Suen (2029-2006), son of Shu-Suen, reigned for 24 years, constantly defending his kingdom against the Amurru,

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(1) Also known as DUN-GI.

(2) Also known as Bur-Sin.

(3) Also known as Gimil-Sin.

the Elamites and disloyal cities, which one by one ceased to send tribute. The Anurru from the West kept up a relentless pressure, defeating his fortresses one by one. Everything went wrong at once for this unfortunate man: there was famine in the land and his charismatic powers failed him. In his 24th year Ur was captured and destroyed by the Elamites, and he himself was carried away, a prisoner.

### Lapis Lazuli in Ur III

The principal archaeological evidence for the use of lapis lazuli at this time comes from a group of five 'royal' tombs<sup>1</sup> at Ur. These tombs were originally placed by Woolley in his Second Dynasty cemetery:

"By Second Dynasty he meant to indicate that the tombs were intermediate between the Early Dynastic 'Royal Cemetery' and the later, Sargonid, burials. The need for classifying the tombs in this way appeared to him self-evident; on the one hand because of the Sargonid connections of their grave goods; on the other because so much plano-convex brick construction was associated with them. Since this type of brick went out of fashion near the end of the Early Dynastic period, it seemed likely that the tombs were pre-Sargonid in date." 2

Using the evidence of the internal glyptic, Briggs Buchanan has proved that these tombs belonged not to the pre-Sargonid era but to the period of the Third Dynasty of Ur, prior to the reign of Amar-Suen.<sup>3</sup> They therefore provide valuable evidence for the burial customs and funerary equipment of this period.

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(1) PG 1422, PG 1845, PG 1847, PG 1849 and PG 1850.

(2) Buchanan, "The Date of the So-Called Second Dynasty Graves of the Royal Cemetery at Ur", JAOS 74, p. 147.

(3) Ibid, p. 150.

As in Early Dynastic times, the principal body or bodies are accompanied by a large retinue. It seems probable that this return to the extravagant custom of multiple burials, first practised in the other great Sumerian age, the Early Dynastic, is a deliberate revival of earlier traditions in this time of a Sumerian renaissance. All the bodies, both the principal corpse and his retainers, are richly equipped. In addition to gold fillets,<sup>1</sup> ear-rings and finger-rings, the dead are provided with several necklaces. These necklaces are very different in style to those of the earlier Sumerian burials in Early Dynastic times. No longer are they dominated by a love of symmetry and balanced composition, as is characteristic of the earlier jewellery. If any rule holds it seems to be that of variety. A wide range of materials are used including agate, cat's eye, calcite, carnelian, chalcedony, crystal, haematite, jasper, lapis lazuli, marble and steatite - and gold, gold-plated copper, silver and copper. The gold-plated copper beads appear to be an innovation of the period, which perhaps suggests a shortage of gold. They are a helpful diagnostic. The stone beads range in size from very large to minute and necklaces of minute beads are another indication by which jewellery of the Third Dynasty can sometimes be recognized.

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(1) It is perhaps of interest to note that the inhabitants of Hissar III B also wore gold fillets, although theirs' are less elaborate than the Ur examples. Cf. U.E. II, Pl. 147 and E.F. Schmidt, Tape Hissar, Pl. LVI, H. 3221, p. 210. Frontlets from Ashur more closely resemble the Hissar specimens - A. Haller, Die Gräber und Gräfte von Assur, Pl. 10 a.

This again suggests a possible shortage of material, as the smaller the beads the more economically can the stone be cut. The elaborately faceted beads of Early Dynastic, as in Sargonid times, appear no more: bead shapes are simpler. The most common forms are squares, rectangles, tubes, dates, plain and fluted balls, discs, rings and diamonds, very similar in fact to the Akkadian range (see pp. 94-95), although an even greater variety of material is employed.

The other tombs dated to the Post-Akkadian period in the Royal Cemetery (see p. 74 and p. 100, note 2) lack rigid lines of demarcation. They are on the whole rather poor single burials.

More Ur III material, including both beads and seals of lapis lazuli was collected from the nearby cemetery site of Diqdiqqeh.<sup>1</sup> The surface had been greatly eroded and finds were picked up, rather than excavated, from the topsoil.

Lapis beads and seals were also found in some of the oldest graves from Ashur, assigned to the Akkadian and Third Ur periods. Graves 10 and 13, equipped with lapis offerings, can be more closely dated on ceramic evidence to Ur III.<sup>2</sup>

Sculptures of the period often show a goddess adorned not with bead necklaces but with metal rings around her neck<sup>3</sup>

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(1) See p. 100 and note 4 on that page.

(2) A. Haller, Die Gräber und Gräfte von Assur, p. 9.

(3) M.E.L. Mallowan, Early Mesopotamia and Iran, Pl. 131: A. Parrot, Sumer, Pls. 272, 275, 281, 287 and 296.

and it may be that these were then more prized than bead necklaces, which may no longer have been the principal article of jewellery.

### Cylinder Seals

The main outlines of the glyptic style of Ur III, which made possible the re-dating of the five principal tombs at Ur, as well as the others, has been established. Most of the seals show finely engraved ritual scenes (Pl. 39, 1-6 and Pl. 40, 1-12). The theme is usually a minor goddess leading a worshipper by the hand to an enthroned deity, who is often female but not usually further identified. Occasionally the receiving deity is replaced by the figure of the king, a representation which originated in Ur III, when kings were deified during their lives. The interceding goddess is occasionally omitted (Pl. 40, 1-2), but when present her raised right arm grasping the worshipper is a characteristic feature of Ur III seals (Pl. 39, 1, 4: Pl. 40, 3-6 and 9-11). Worshipers are shown with hair and sometimes wearing hats (Pl. 40), while on Old Babylonian seals they are usually bald.<sup>1</sup>

The presentation scene occasionally takes place above a scene showing a row of swimming birds (Pl. 39, 3-5 and Pl. 40, 7). This feature was begun earlier (see Pl. 36, 5 and 9) and Porada suggests that it may be a feature of

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(1) C.A.B.E.S. I, pp. 33-37, but see comment on p. 47.

Guti seals.<sup>1</sup>

The seals are slightly smaller than those of the preceding period, but lapis lazuli remains a relatively popular material. It is particularly favoured for the carving of presentation scenes, and this may not be fortuitous. In these the worshipper, doubtless the owner of the seal, is presented to his chosen deity, to gain his favourable attention. There is, relevantly enough, a cuneiform text which records the virtues of five different stones. It says:

"(if) a seal is made of lapis lazuli, he will be altogether lucky (literally 'he will have a god<sub>2</sub> altogether'), that god will make him happy".

This suggests that lapis lazuli was a propitious stone for attracting the favour of a god.

### Isin-Larsa and the First Dynasty of Babylon<sup>3</sup>

With the collapse of the Third Dynasty of Ur Babylonia was left in a state of considerable political weakness until the reign of Hammurabi (1792-1750), who reunified much of the country. During the two and a half centuries of the Isin-Larsa period, many city states were independent. The

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- (1) C.A.N.E.S. I, p. 32. Buchanan, however, assigns them to Ur III, e.g. U.E. X, seal nos. 251 from Ur, and 253 and 255 from Diqdiqqeh, see JAOS 73, p. 228.
  - (2) K.A.R. no. 185, rev. I, ll, translated in a letter to Professor M.E.L. Mallowan of November 17, 1964, from Professor C.J. Gadd.
  - (3) Historical synopsis from: C.J. Gadd, C.A.H. I, Ch. XXII; C.J. Gadd, "Hammurabi and the end of his Dynasty", C.A.H. II, Ch. V; J.R. Kupper, "Northern Mesopotamia and Syria", C.A.H. II, Ch. I; and H. Saggs, The Greatness That Was Babylon, p. 60 ff.

two major powers of the time were the rulers of Isin and Larsa: neither was able to assert a unified control of the entire country but each enjoyed considerable prosperity in its turn, as is witnessed by the high quality of their buildings. Each dynasty occasionally had a ruler of note: the founder of Isin rule, Amorite Ishbi-Erra of Mari (2017-1985) expelled the Elamite garrison from the ruins of Ur and also controlled Nippur. Gungunum (1932-1906), fifth king of Larsa, attacked Elam and Anshan and also acquired the suzerainty of Ur from Isin. He was much occupied with communications and waterways within Babylonia. Isin continued to decline in importance and was finally conquered by Rim-Sin of Larsa, just prior to the accession of Hammurabi.

There were, at this time, still many independent cities, notably Mari and Eshnunna, while Assyria also was temporarily enjoying a position of considerable power under the rule of Shamshi-Adad I (1813-1781). Realizing the danger of the rising power of Babylon, Mari, Eshnunna and Elam joined in a coalition against Hammurabi, by whom they were soundly defeated. The next year, 1763, Hammurabi overthrew his major opponent, Rim-Sin of Larsa. Three years later he defeated some of the outlying city states and subdued Mari. He was then ruler not only of a powerful city but of a large empire, which he managed ably and assiduously. He gave his land one language for administration and business and one legal code. By an extensive programme of canal building he

laid the foundations of agricultural prosperity. His hard-won achievements did not, however, long survive his death.

Early in the reign of Samsu-iluna (1749-1712) a Kassite army raided from Elam and conquered Ur and Erech. In his 28th year there was a revolt in Southern Babylonia which he was unable to suppress. The South was ruled for the next two centuries by the Dynasty of the Sea-Lands. The next three rulers of the First Dynasty, Abi-ešuh (1711-1684), Ammiditana (1683-1647) and Ammisaduqa (1646-1626), reigned over little more than Babylon and its surrounds. They were continually occupied with border raids and repairing defences.

The weak remnants of the First Dynasty were shattered in 1595 by a sudden raid from an unexpected quarter. Mursilis I of the Hittites swept from Anatolia through Syria to Babylon, which he sacked, overthrowing the last king of Hammurabi's line, Samsuditana (1626-1595). Mursilis had to hurry back to Hatti, where he himself was assassinated. The Babylonian vacancy was filled by the Kassites.

#### Lapis Lazuli in the Isin-Larsa and Old Babylonian Periods

Lapis lazuli occurs in two Old Assyrian graves at Ashur.<sup>1</sup> In Grab 20 it is used for two seals (Pl. 43, 8 and 9) as well as for beads. One rectangular bead with slightly flared ends is banded in the middle with gold, while another carries gold caps. Grab 25 has about 100 beads of glass,

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(1) A. Haller, Die Gräber und Gräfte von Assur, p. 10, Grab 20 and p. 11, Grab 25.

agate and lapis lazuli.

At Mari lapis lazuli is once again used in inlay work: shapes include circles, M.1286, and flower petals, M.1366.<sup>1</sup> A striated triangular pendant, M.981, and a sensitive crouching stag with alert raised head and widespread antlers, M.765, are also carved from lapis.<sup>2</sup>

### Cylinder Seals

There appears at present to be no definite glyptic style which can be assigned to the two and a half centuries of weak Isin-Larsa rule. Not only do the Ur III presentation scenes continue to be engraved at this time,<sup>3</sup> but also it has recently been discovered that the style hitherto defined as First Dynasty of Babylon begins considerably before the accession of Hammurabi. Seal impressions on tags dated to Sin-iddinam of Larsa show that "the principal features of the 'style of the First Dynasty of Babylon' were already well represented before that Dynasty assumed political predominance throughout Mesopotamia".<sup>4</sup>

The presentation scene continues to be engraved on Old Babylonian seals, although it follows two separate lines of

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- (1) A. Parrot, Le Palais: Documents et Monuments: MAM II, p. 109, figs. 77 and 78.
  - (2) Ibid, p. 103, figs. 75 and 74.
  - (3) The fine seal of Bilalama of Eshnunna, a ruler in the Isin time, is an example of this: H. Frankfort, Seton Lloyd and T. Jacobsen, The Gimilsin Temple and the Palace of the Rulers at Tell Asmar, O.I.P. XLIII, p. 203, fig. 101 f. The design can be compared with figures on the famous Stele of Ur-nammu.
  - (4) E. Porada, "Review of C.A.N.E.S. I", Journal of Cuneiform Studies 4, p. 161.

development, both of which result in the virtual destruction of the scene of worship. With so uniform a subject there is considerable difficulty in differentiating individual seals. One school abandoned the idea of distinctive design and relied completely on the inscription for identification (Pl. 42, 1, 3, 7 and 8), thus in effect ignoring the function of a seal. The designs on these stereotyped seals were often confined to two figures, a deity or a deified king and a suppliant.

The other school of Old Babylonian seal design also recognized the difficulty of individual recognition of seals. They therefore added several secondary motifs to the principal scene, which were often completely unconnected with the main theme (Pl. 42, 2, 4, 9 and Pl. 43, 5-8). These consisted of divine, human, mythological or animal figures, of divine attributes and of ritual objects, such as maces or vases. Many of these motifs derived directly from the Early Dynastic and Akkadian repertoires of Bull-man, nude hero, crossed lions, attacking animals, etc. In some cases, but not on any of the recorded lapis seals, the additional motifs occupied the entire design.

A change was also made in the order of the actual scene of worship. No longer does the goddess Lama grasp the worshipper firmly by the hand and lead him to the deity, for the worshipper now precedes her and she stands behind him with raised hands - a feature which occurs on the seal of Bilalama, ruler of Eshnunna, early in the Isin-Larsa

period, and on the Ur-nammu Stele.

Seals of the Isin-Larsa period include, therefore, both late Ur III and early Old Babylonian designs. As well as these, a further group was isolated at Tell Asmar, ancient Eshnunna, a town which flourished during this time of weak central authority. Miniature seals found there bear coarsened renderings of the presentation scenes of Ur III (Pl. 41, 4).<sup>1</sup> Differentiation between the designs of these coarse and stereotyped seals was often achieved by the makeshift of drilling a couple of holes between the figures<sup>2</sup> or by reversing figures.<sup>3</sup>

A seal of Late First Dynasty period from Alalakh 7 shows what is to become a familiar Assyrian scene of a genie with a bucket standing by a sacred tree (Pl. 43, 10).

### Conclusions

Historically we have two prosperous periods, Ur III and Old Babylonian, separated by the weak time of Isin and Larsa. In Ur III lapis is not infrequently used, both for seals and beads, although only some 48 seals<sup>4</sup> are recorded in Appendix C, considerably less than in Akkadian times. Business records, however, confirm that there were adequate supplies.

There is a further sharp drop in the use of the stone in Isin-Larsa, with only some 14 seals recorded, but more

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(1) H. Frankfort, Cylinder Seals, p. 147, Pl. XXVI, a-c.

(2) Ibid, Pl. XXVI, d, f, h.

(3) Ibid, Pl. XXVI, f.

(4) Some of these seals may be Akkadian, as noted before.

seals are carved in Old Babylonian times. Throughout this time lapis lazuli was, on the whole, used only for the depiction of presentation scenes, perhaps because of the belief that it was especially favourable for this purpose, see p. 108. The technical standard of lapis seals at this time is, however, often poor.

Supplies of lapis lazuli are not particularly abundant, and the relative rarity of lapis lazuli seals is most noticeable when the actual number of such seals is compared with the far larger quantity of those made from more common materials, such as haematite.

The rich sites of Ashur and Mari have only produced a small quantity of the stone, used for beads, inlay and an amulet. Compared, therefore, with the amount used in Early Dynastic times, the popularity, or perhaps the availability of supplies, of lapis lazuli has decreased considerably.

#### The Kassite and Middle Assyrian Periods

Even prior to the final collapse of the First Dynasty of Babylon the Kassite tribes of the Zagros mountains had been endeavouring to capture Babylonia. They raided the country first in the ninth year of Samsu-iluna and again in the third year of his son, but they only acquired control a century later when they took advantage of the chaos caused by the sudden raid and withdrawal of Mursilis I. From that time, 1595, they ruled Babylonia in peace and prosperity for some 576 years.

The Kassite period was one of intense diplomatic activity. The great powers of the time, Egypt, Hatti, Mitanni and Kassite Babylonia frequently corresponded with each other and sent 'gifts'. Egypt<sup>1</sup> sent gold in return for which both Mitanni and Babylonia provided large quantities of lapis lazuli.<sup>2</sup> That Mitanni and Babylon had ample supplies of lapis lazuli is not surprising for both the Hurrians of Mitanni and the Kassites had originally come from Iran and doubtless maintained their Iranian connections.

The Kassites may have supplied the Hittite court with lapis lazuli, as well as Egypt, for Hattusilis III complained when supplies ceased.<sup>3</sup> The Hittites also acquired lapis from Ugarit,<sup>3</sup> who must themselves have acquired it from Mitanni or Babylon.

With the rise of imperial Assyria, which began in the reign of Assur-uballit (1365-1330 B.C.) the Kassites and the Assyrians began a long struggle for supremacy - won

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(1) As we have already discussed, the principal source for lapis lazuli in antiquity was Badakhshan and the Egyptians must also have acquired their supplies of lapis lazuli from that source. hsbd, identified as Egyptian for lapis lazuli as well as for false lapis, was brought as tribute from Cyprus, Syria, Ashur, Babylon and Hatti, as well as from the two principal sources of tfrt and hnty-š. The latter two are considered to be the same and Harris thinks that tfrt represents one of the more important trading stations on the route from Badakhshan. Locations suggested for tfrt include Tiflis on the Caspian Sea, Sippar and Mount Bikni, which Harris equates with Dapara, the Tapures of Plotiny and Pliny's Tapyres. J.R. Harris, Lexicographical Studies in Ancient Egyptian Minerals, p. 126.

(2) See Chapter III, p. 156.

(3) See Chapter III, p. 159.

sometimes by one and sometimes by the other: for instance Tukulti Ninurta I (1244-1208) defeated the Kassite Kashiash IV, but the former's successors became vassals of Babylonia. Assyria recovered strength in the reign of Tiglath Pileser I (1115-1077), who wisely never interfered in Babylonia, contenting himself with campaigns to the North, North-East and North-West of Assyria. After this the situation in both countries is obscure. Babylon was occupied by the Aramaeans who deposed the last Kassite, Harđuk-shapik-zer-mati (1080-1068) and the succession in Assyria was interrupted after the death of Assur-bel-kala (1067-1046).

#### Lapis Lazuli in Kassite and Middle Assyrian times

As noted above, the texts testify to ample supplies of lapis lazuli during the years of Kassite rule. Kadashmanharbe and Kadashman Enlil I sent supplies of lapis to Amenophis III of Egypt, as did Tushratta of Mitanni. Tushratta also sent it to Amenophis IV, to whom Burnaburiaš II (1375-1347) despatched gifts, including many minas of both the worked and the unworked stone.<sup>1</sup> Inventories of the period list large quantities of lapis lazuli in temple treasures and the like.<sup>2</sup>

But while the texts claim that there were ample supplies, finds of lapis lazuli objects of the period 1600-1000 B.C.

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(1) See Chapter III, p. 157 and p. 158.

(2) See Chapter III, p. 160.

are not plentiful. Only one unpierced flat bead of lapis has been found in the Hurrian levels of Nuzi,<sup>1</sup> for most of the jewellery there was made of glass.

A number of inscribed discs of lapis lazuli have been recovered from "Parthian" houses at Nippur.<sup>2</sup> They originally formed part of a temple treasure, dedicated to the gods by Kassite kings.<sup>3</sup> These discs were being recut into beads.<sup>2</sup>

Some graves of the period have been found at Ur, where a large Kassite palace has been recorded. The beads in these graves are usually of assorted stones, including agate, carnelian, crystal, frit, paste and quartz, as well as lapis lazuli.<sup>4</sup> Bead types are varied and include rings, lentoids, double conoids and discs. Possibly peculiar to lapis lazuli are bugle-shaped beads and three-holed spacers (U.7505). The latter also occur in Gruft 45 at Ashur of the Middle Assyrian period.

Gruft 45 was the richest burial found at Ashur.<sup>5</sup> It contained two bodies, a male and a female, both lavishly

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(1) R.F.S. Starr, Nuzi, Volume I, p. 454.

(2) H.V. Hilprecht, B.E. I, Series D, p. 335 and note 1.

(3) See Chapter III, p. 160.

(4) U.E. VIII, pp. 105-107. U.7505: U.7572 in KG 14:  
U.16727 in KG 35: U.17852: U.18152 in KG 53:  
U.18153 in KG 54: and U.18166.

(5) A. Haller, Die Gräber und Gräfte von Assur,  
pp. 123-148.

endowed with finely-worked jewellery (Pl. 18). Lapis lazuli was a favoured material and was used for beads, pendants and amulets. The man's necklaces consisted of three-holed spacers in the form of heavy rectangles, both plain and fluted, of gold and lapis lazuli, used alternately (Pl. 18, 1 and 2) Flat and fluted rectangles of lapis lazuli also occurred as gold-capped pendants (Pl. 18, 3 and 5).

The woman's necklaces were made of an assortment of materials cut in varied shapes and sizes. Materials included onyx, rock crystal, carnelian, jasper, lapis lazuli, marble, shell, serpentine, frit and glass. Pieces of lapis lazuli were also placed in an intricately worked gold setting to form pendants of great richness. One such piece of lapis was shaped into a sheep's head (Pl. 18,8), while a similar piece was left plain (Pl. 18, 7). There were small 'tear-drops' of gold set with lapis lazuli (Pl. 18, 6) and crescent moons of the stone were hung pendant from an elaborate gold wire double spiral ornament (Pl. 18, 4). Amulet beads of lapis lazuli included frogs, birds, flies, axes, crescent moons, little hammers, crosses and rosettes. There was also a 'pomegranate' of lapis lazuli (Pl. 18, 9), although this shape was usually carved in carnelian.

Gruft 45 also contained a fine seal of lapis lazuli carved in the Middle Assyrian style (Pl. 45, 5).

Less important graves of the period at Ashur were also endowed with lapis lazuli gifts, but none as richly as the one described above. They usually contained just a necklace of such mixed materials as agate, jasper, lapis lazuli, paste, frit, etc.<sup>1</sup>

#### Cylinder Seals

There are many contemporary literary mentions of seals of lapis lazuli, particularly to such seals being given to Pharaoh. The Kassite kings list them among their gifts and Assur-uballit gave a chariot and horses and a fine seal of lapis lazuli.<sup>2</sup> Sennacherib describes how he recovers the lapis lazuli seal of Tukulti Ninurta from Babylon whence it had been removed centuries earlier.<sup>3</sup>

While references are frequent, actual lapis lazuli seals are not common. There are two principal glyptic styles associated with the Kassites: the first, a continuation of the Old Babylonian presentation scene, with lengthy inscriptions or even with only an inscription; in the second, with the influence of Mitanni, a change is made in subject, which now includes scenes with sacred trees, animals, monsters, huntsmen and heroes.

The greatest number of Kassite and contemporary seals

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- (1) A. Haller, Die Gräber und Gräfte von Assur, p. 12, Grab 29; p. 18, Grab 132 and 137; p. 19, Grab 151; p. 63, Grab 746; p. 100, Gruft 8; p. 114-5, Gruft 37; and p. 168, Gruft 71.
- (2) See Chapter III, p. 158.
- (3) D.J. Wiseman, "The Vassal Treaties of Esarhaddon", Iraq XX, p. 21.

of lapis lazuli have been found not in Mesopotamia but in Thebes.<sup>1</sup> No less than 39 carved cylinders of lapis lazuli have been found there in the destruction of the late Mycenaean palace.<sup>2</sup> They belong to several groups:

1. A few early Mesopotamian seals, ranging in date from E.D. III to Old Babylonian.
2. Kassite of the 14th and 15th centuries.
3. Mitannian of similar date.
4. One Hittite cylinder.
5. Several Aegean seals.<sup>2</sup>

In one case a new Aegean design was being carved on top of an old and worn Babylonian design.<sup>2</sup> This may suggest that this rather motley collection of seals was imported in bulk as so many pieces of lapis lazuli, rather than as Babylonian cylinder seals, and was ultimately destined for recarving.

No less than fourteen of these 39 cylinders bear cuneiform inscriptions<sup>3</sup> and this has enabled some of them to be precisely dated. Plate 44, 1, belonged to Kidin-Marduk, an official of Burnaburiaš II. It shows the fish-man holding vases of running water, a typical feature of Kassite seals. The Kassite seal on Plate 44, 5, shows clear Mitannian influence in the subject of hero and animals between sacred trees. Plate 45, 2, is described by Dr. Porada

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- (1) These seals have only been published in brief preliminary reports to date.
  - (2) E. Porada, "Cylinder Seals from Thebes: A Preliminary Report", American Journal of Archaeology 69, p. 173.
  - (3) Nikolaos Platon, "Oriental Seals from the Palace of Cadmus: Unique discoveries in Boeotian Thebes", I.L.N. of November 28, 1964, Archaeological Section no. 2207, pp. 859-861, figs. 1-13.

as Mitannian with a later addition of an Egyptianized figure.<sup>1</sup> Plate 45, 3, is also Mitannian and both seals, she suggests, may have come from North Syria. Dr. Porada also considers Plate 45, 4, to have Mitannian elements and draws attention to the resemblance of the seated figure to one from Ugarit.<sup>2</sup> She points out that one of the seals described as being of lapis lazuli in the Hittite style is really agate, and possibly carved in Thebes. A printing error in her text obscures which seal this may be but it is almost certainly Plate 45, 1. Typically Aegean features of this seal are the heavy outlines and the 'bobbly' feet.

Some fine beads of lapis lazuli in the shape of a stylized palm were found with the lapis seals (Pl. 18, 10).<sup>3</sup>

This Theban hoard is reminiscent of one found in Egypt some time ago, but still unfortunately published with only inadequate photographs. The Egyptian hoard, also consisting principally of lapis lazuli in the form of broken or whole cylinder seals, beads, pendants, etc. was found in a casket dedicated as a foundation deposit of the Temple of Tod,<sup>4</sup>

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- (1) E. Porada, A.J.A. 69, p. 173.
  - (2) C.F.A. Schaeffer, Ugaritica II, M.R.S. V, p. 41.
  - (3) Platon, I.L.N. of 28.xi.64, fig. 11.
  - (4) J. Vandier, "A propos d'un dépôt de provenance Asiatique trouvé à Tod", Syria XVIII, pp. 174-182: F. Bisson de la Roque, G. Contenau, F. Chapouthier, Le Trésor de Tód, pp. 15-20: F. Bisson de la Roque, Le Trésor de Tód, Catalogue Général des Antiquités Égyptiennes du Musée du Caire, nos. 70501-70754.

which has been dated on Egyptian evidence to the reign of Amcnemhat II (c. 1938-1903). The seals are particularly poorly reproduced and belong to a wide range of periods - Jendat Nasr to Ur III. Some authorities have suggested that a few of the seals may be as late as the Old Babylonian period - if so they must date to the very beginning of the First Dynasty of Babylon. This treasure, like that from Thebes, also seems to be a motley assortment of lapis lazuli, haphazardly collected, and does not contain any fine objets d'art.

The Kassite seals presumed to come from Mesopotamia, which are illustrated on Plate 44, are all inscribed. One bears only an inscription (Pl. 44, 2), while another is an inscribed disc bead (Pl. 44, 4); and the last, from Babylon, carries a small Kassite scene as well as the inscription (Pl. 44, 3). The Maltese cross is a characteristic motif of the period.

The seal shown on Plate 45, 5, comes, as noted above, from the rich Gruft 45 at Ashur. It shows a typical Middle Assyrian scene.

The evidence for the use of lapis lazuli in the period 1600-1000 is therefore fairly plentiful. Literary evidence confirms that the Kassites, and for a time the Mitannians also, were purveyors of the stone to the other Near Eastern powers, Egypt and Hatti.

## The Neo-Assyrian Period

Assyria began her final and greatest period of expansion during the reign of Adad-nirari II (911-891). Her power was to last with only minor interruptions for nearly three centuries before she was finally overthrown and annihilated in 612 B.C. by the combined forces of Medes and Babylonians. During these three centuries Assyria enjoyed high prosperity, controlling large areas of the Near East, from which she exacted heavy tribute. Tribute of lapis lazuli was extracted from the Medes, an Iranian people probably sited in the Zagros mountains near their later capital city of Ecbatana. They controlled much of Western Iran up to Mount Bikni or Demavand.

We first hear of the Medes in the Annals of Shalmaneser III (858-824), who attacked both Parsua and the Medes in the campaign of his 24th year against Namri. Adad-nirari III (810-783) conquered the Medes, as also did Tiglath Pileser III (745-727). Tiglath Pileser appointed governors over them and recorded receiving a tribute which was principally of livestock<sup>1</sup>, although he also was given 300 talents of lapis lazuli.<sup>2</sup> Sargon II (721-705), who claimed control of 34 districts of the Medes up to Mount Bikni,<sup>3</sup> imposed on them a heavy tribute: Sennacherib (704-681) also received "the wealth of distant Medes".<sup>4</sup> When the Median chiefs came

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(1) D.D. Luckenbill, Ancient Records, Vol. I, para. 812.

(2) Ibid, Vol. I, para. 768.

(3) Ibid, Vol. II, para. 58.

(4) Ibid, Vol. II, para. 432.

to Assyria to sign the famous Vassal Treaties in the reign of Esarhaddon (680-669),<sup>1</sup> they brought gifts of mighty steeds and lapis lazuli.<sup>2</sup> The chiefs applied for Assyrian help to reinstate them in their provinces, and this was given, although it was paid for in the form of heavy tribute and terms of vassalage.

Assurbanipal (668-626) had to put down a Median revolt led by Birishatri, but this is the last Median reverse we hear of in the Annals. In the reign of Esarhaddon they had consisted of separate tribes, but during the reign of Assurbanipal these factions were welded into a single kingdom by a leader, Huvakshatra or Cyaxares.<sup>3</sup> Shortly after 621 B.C. Cyaxares and Nabopolassar of Babylon united to bring down their common enemy, Assyria, in which task they succeeded some nine years later.

#### Lapis Lazuli in the Neo-Assyrian Period

We first hear of a tribute of lapis lazuli imposed on the Medes during the reign of Tiglath Pileser III. The situation in Iran prior to his reign is confused owing to the influx of Indo-Iranian tribes at the end of the second and the beginning of the first millennium B.C. It is possible that the trade route to the East may have been blocked and we should not perhaps expect to hear of plentiful

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(1) D.J. Wiseman, "The Vassal Treaties of Esarhaddon", Iraq XX, pp. 1-99.

(2) Ibid, p. 11.

(3) H. Saggs, The Greatness That Was Babylon, p. 136.

supplies much prior to the reign of Tiglath Pileser III: indeed only minimal quantities are mentioned by Assurnasir-pal (883-859), who gave some to the shrine of Ninurta, and by Sargon III (858-824), who incorporated a piece in a foundation deposit.<sup>1</sup> In the elaborate descriptions of palace equipment there are no records of goods of lapis lazuli, or of objects inlaid with the stone. The paucity of supplies at this time may be reflected by the technique of inlaying lapis lazuli: a thin section of the stone was set into a prepared cloison on top of a layer of blue bedding material, composed of calcium carbonate and blue frit.<sup>2</sup> Once, however, regular Median tribute began, supplies must have been plentiful. Sargon records acquiring lapis lazuli objects as part of the booty from the Temple of Haldi in Urartu, sacked during his eighth campaign.<sup>3</sup>

As might be expected, quite a large number of the graves and tombs of Neo-Assyrian Ashur are endowed with necklaces, many of the beads of which are made of lapis lazuli.<sup>4</sup> Other popular materials include agate, glass and frit.

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(1) Chapter III, p. 162.

(2) M.E.L. Mallowan, Nimrud and its Remains, p. 141.

(3) Chapter III, p. 163.

(4) A. Heller, Die Gräber und Gräfte von Assur: Die Gräber, 42, 48, 50, 54, 177, 179, 182, 186, 188, 190, 191, 199, 203, 213, 220, 227, 237, 247, 264, 265, 268, 270, 273, 280, 300, 304, 443, 446, 456, 459, 467, 468, 469, 504, 613, 685, 686, 695, 700, 755, 756, 757, 778, 785, 789, 790, 800, 810, 859, 863, 864, 872, 881, 958, 962, 970, 989: Die Gräfte, 33, 44, 47?, 53, 64, 66, 68 and 74c.

As noted above, lapis lazuli was also used for delicate inlay work, set in ivory cloisons. The most famous ivory embellished with lapis lazuli inlay is the "Ethiopian and the Lioness" (Pl. 24).<sup>1</sup> The inlay for the flowers was bedded on a frit base while other pieces, for instance the disc on the lioness' head, used an appropriately sized section. The "Lotus and Bud" ivory strip<sup>2</sup> was also embellished with lapis inlays bedded on a frit base. Inlays of lapis lazuli were also found in Babylon, as well as in Ashur, where they represented locks of hair, beards and eyes.<sup>3</sup> On the whole, however, lapis lazuli was an uncommon material for inlay-work at this time. It was both cheaper and simpler to mould "Egyptian blue" or glass<sup>4</sup> to the requisite shape than to shape the real stone.

#### Cylinder Seals.

Only a few seals of lapis lazuli belonging to the Neo-Assyrian period are known. Other materials, such as chalcedony and agate, serpentine, steatite, marble and frit, appear to have been much more popular for the general run of seals.

The most distinctive group of lapis lazuli seals of the period are a series of exceptionally large seals: some

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(1) M.E.L. Mallowan, Nimrud and its Remains, Vol. I, frontispiece and p. 139 ff.

(2) Ibid, Vol. II, Fig. 502, ND.7741.

(3) R. Koldewey, W.V.D.O.G. 15, Pl. 9.

(4) M.E.L. Mallowan, Nimrud and its Remains, II, p. 632.

measure no less than 200 x 40 mm. A group of six such seals was found in the Esagila Temple of Marduk in Babylon. Four of these were plain cylinders, two of lapis lazuli and the other two of "Egyptian blue".<sup>1</sup> The remaining two of lapis lazuli were superbly engraved with a god-figure accompanied by an inscription.<sup>2</sup> One, inscribed in the Neo-Babylonian script,<sup>3</sup> is dedicated to the god Marduk by Marduk-zakir-shuni, a contemporary of Shalmaneser III. It is probably he who is shown shaking hands with Shalmaneser III on the inscribed throne dais from Fort Shalmaneser, Nimrud.<sup>4</sup> The god depicted on the seal is Marduk (Pl. 46, 8). He is holding the rod and ring of authority, while beside him is seated his dragon. The inscription states that the king commissioned this seal to be made of "pure lapis lazuli, properly decorated with red gold, an ornament of his (the god's) holy neck".<sup>5</sup> This suggests that the seal was either covered or capped with gold and hung as a pendant on the god's statue.

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- (1) R. Koldewey, Mitteilungen der Deutschen Orient-Gesellschaft zu Berlin 5, März bis November, 1900, pp. 5-6.
  - (2) Ibid., pp. 11-15: R. Koldewey, W.V.D.O.G. 15, Pl. 8, 74 and 75: and R. Koldewey, The Excavations at Babylon, p. 221, figs. 134 and 135.
  - (3) The term 'Neo-Babylonian' applied to objects or to language covers the period from c. 1000 B.C. to 600 B.C. To describe the historical period of the Chaldean kings, which only lasted some seventy years, the term 'Neo-Babylonian Empire' is used.
  - (4) M.E.L. Mallowan, Nimrud and its Remains, p. 446, Pl. 371 d.
  - (5) E.F. Schmidt, Persepolis II, p. 57.

The second inscribed seal (Pl. 46, 6) from Esagila was dedicated by Esarhaddon to Marduk. A Neo-Babylonian addition to the Assyrian text registers the seal as "Property of the god Marduk. Seal of the god Adad from the temple Esagila".<sup>1</sup> The Adad figure is shown brandishing lightning in his right hand and holding the reins of a winged monster in his left.

A group of similar votive cylinders, many of which were, however, fragmentary, was found in the Treasury at Persepolis.<sup>2</sup> These cylinders, like those from Babylon, were both plain and decorated. Most of the plain ones were made of either lapis lazuli or "Egyptian blue".<sup>3</sup> As well as the eight plain cylinders of lapis lazuli there were six inscribed cylinders,<sup>4</sup> the texts of which were written in the Neo-Babylonian language. The design of the head of Marduk on PT4 861 is closely comparable with the Marduk figure on the seal of Marduk-zakir-shumi,<sup>5</sup> referred to above. Similarly the heavily ornamented skirt of seal PT4 943 and the almost identical skirt shown on the chalcedony fragment

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(1) E.F. Schmidt, Persepolis II, p. 57.

(2) Ibid, pp. 57-64.

(3) Ibid, p. 64.

(4) Ibid, p. 58, Pl. 25, no. 6, PT5 264  
p. 58, Pl. 25, no. 9, PT4 99 and 328.  
p. 59, Pl. 26, no. 1, PT4 861.  
p. 59, not illustrated, PT4 716.  
p. 59, Pl. 25, no. 10, PT4 942.  
p. 60, Pl. 26, no. 3, PT4 943.

(5) Compare Persepolis II, Pl. 26, no. 1 with W.V.D.O.G. 15, Pl. 8, Abb. 74.

PT4 772 share many features with the skirts on the two Neo-Babylonian seals referred to above, and with that shown on another fragmentary lapis votive cylinder, now in the Louvre (Pl. 46, 9).<sup>1</sup>

We seem therefore to have a definite group of very large cylinders, sometimes known as staffs, which were used only for dedication to a god. The majority of such seals were made of lapis lazuli, although other stones are known, for instance carnelian and chalcedony. With the two inscribed seals from Babylon we have two definite dates during which these seals were being carved: from the reign of Marduk-zakir-ahuni to that of Esarhaddon, some two centuries in all. We do not know if they continued in use thereafter, or whether the existing seals were simply preserved as part of the temple treasure, much of which was destined to be looted and taken to Persepolis where inscribed objects of both the Assyrian and Neo-Babylonian kings have been found. These large cylinders appear to be a Neo-Babylonian rather than an Assyrian type of dedicatory seal, even though their floruit was during the period of the Assyrian empire. Their manufacture may have ceased shortly after the fall of Assyria when supplies of lapis lazuli decreased (see below).

The few other Neo-Assyrian seals of lapis lazuli depict ritual and heraldic scenes. The seals illustrated on

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(1) Compare Persepolis II, Pl. 26, nos. 2 and 3 with W.V.D.O.G. 15, Pl. 8, Abb. 74 and 75: and with Louvre II, Pl. 93, 16.

Plate 46, 3 and 7, show a hero heraldically grasping rearing animals by a foreleg. Porada considers that the latter seal shows Babylonian influence and was carved during or after the reign of Sargon.<sup>1</sup> Both the seals are carefully and skilfully worked, employing a high degree of modelling. As well as this use of modelling, Assyrian seals are also cut in a purely linear style and with a heavy use of a bow drill, the traces of which were not usually eradicated.<sup>2</sup> Both this use of drill and a linear line can be seen in the seal on Plate 46, 5, which depicts a spirited scene, showing a mounted hunter pursuing and shooting at a fleeing bull. Ritual scenes are the subject of seals shown on Plate 46, 1 and 2. In these the vestigial remains of the Assyrian sacred tree are flanked in the one case by kneeling worshippers and in the other by bird-men. Seal no. 4 on Plate 46 shows a poorly cut ritual repast.

After the subjection of the Medes, supplies of lapis lazuli must have been plentiful. Yet even so the stone is not greatly favoured in Mesopotamia. Its most important use is for the large votive cylinders or staffs. For the carving of these exceptionally large pieces of the unworked stone must have been required, and with the seal of Marduk-zakir-shuni we know that at least one large piece of lapis

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(1) C.A.N.E.S. I, p. 94.

(2) Ibid., p. 71 ff.

lazuli was available c. 850, a hundred years before Tiglath Pileser III established regular Median tribute. It is perhaps not a coincidence that it is about this time that we first hear of the Medes in the records of Shalmaneser III.

Apart from these dedicatory offerings lapis lazuli is rarely used for seals, although it occurs quite frequently in the graves of the townsfolk of Ashur as a constituent of their necklaces. It is also occasionally employed for inlay, although principally replaced by glass and frit.

### The Neo-Babylonian Empire

After their combined attack on and defeat of the Assyrians, the Babylonians and the Medes formed separate empires, the Babylonians to the South and the Medes to the North. The friendly relations with which these two neighbouring powers began soon became strained as the interests of contiguous lands inevitably diverged. The trade route to the East was therefore soon closed to the Babylonians: as we might expect, very little lapis lazuli has been found. References in texts are rare and they can, in most cases, be read more correctly as blue glazed tiles rather than as lapis lazuli.<sup>1</sup>

At the present moment very little is known of the culture of the Medes, although the outline of their history has been established. No authentic Median site has yet been excavated. The most promising, their ancient capital,

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(1) Chapter III, p. 165.

Ecbatana, lies buried beneath modern Hamadan. We can as yet only guess as to whether the Medes themselves used lapis lazuli, or indeed whether they were interested in maintaining the trade at all. The only objects of lapis lazuli which can with some certainty be dated to this very short period (612-539) are some nine stamp and cylinder seals engraved in a style ascribed to the Neo-Babylonian empire. It is, of course, possible that the large votive cylinders and staffs referred to above continued to be produced.

The technique of a high degree of modelling in cutting seals, which according to Buchanan had begun in Assyria and Babylonia in the late eighth century, remained predominant throughout the Neo-Babylonian empire and continued into the Achaemenian era.<sup>1</sup> A superb example of this can be seen on Plate 47, 2, where a winged monster strides imperiously along. He is cut in high relief and is concisely modelled. The ritual scene on Plate 47, 1, shows a worshipper standing before two altars, on the first is a crescent moon mounted on a ? stone, on the second a seated dog. The earliest of this type of seal dates from the reign of Nebuchadrezzar II (605-562).<sup>2</sup>

The scenes on the stamp seals are closely related to Assyrian designs (cf. Pl. 47, 3-4 with Pl. 46, 2). As noted before the line of demarcation between the two is hard to

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(1) Ashmolean Catalogue I, p. 106.

(2) C.A.N.E.S. I, p. 95.

establish. The scene shows opposed bird-men beneath a crescent moon.

### The Persian Period

To form his mighty empire Cyrus the Great (559-529) conquered three existing empires, that of his overlord, Astyages the Mede (in 550 B.C.), that of Croesus, the Lydian (in 547 B.C.) and that of Nabunaid, the Babylonian (in 539 B.C.). He also made extensive conquests in the East travelling as far as Sogdiana. It is perhaps of interest that as early as the fifth year of Cyrus' accession in Babylon a business transaction is recorded which deals with a sale of 55 minas of lapis lazuli,<sup>1</sup> for with the formation of the wide-spreading Persian empire, which was to stretch from Egypt to Afghanistan, from India to Asia Minor and Greece, trade was freer than it had ever been before. Political boundaries became less rigid than previously and for two centuries the Near East profited from an era of unparalleled commercial prosperity and freedom. The wealth of the Persian kings was fabled: as their war-like qualities declined they were nonetheless able to maintain control of their empire by extensive bribery.

Darius the Great (521-486) describes how the lapis lazuli for his palace at Susa was brought from Sogdiana,<sup>1</sup> Yet despite this free trade and the use of the stone in

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(1) Chapter III, p.166.

royal palaces, comparatively few objects of lapis lazuli have survived. This may have been due to the thorough sacking and looting of the Persian capital cities and treasuries by Alexander's men or it may be that the stone was no longer in fashion despite its easy availability.

Finds of lapis lazuli have been made at Susa, Pasargadae and Persepolis. A burial in a bronze sarcophagus at Susa contained a richly endowed body.<sup>1</sup> Lapis lazuli was an important constituent of the jewellery and was often combined with turquoise, the two colours complementing each other. Lapis lazuli was employed both for beads and for inlay work. The heads were often capped with gold.<sup>2</sup> Beads of one necklace were formed of a gold core set with alternate inlays of lapis and turquoise.<sup>3</sup> Similar segmented beads have been found at Pasargadae<sup>4</sup> and Persepolis.<sup>5</sup> From the Susa necklace of segmented beads there hung delicate cloisonné pendants also inlaid in turquoise and lapis (Plate 48, 6), although some inlays of carnelian were used as well.<sup>3</sup> The intricate circular ear-rings (Pl. 48, 4)<sup>6</sup> in

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- (1) J. de Morgan, "Découverte d'une Sépulture Achéménide à Suse", M.D.P. VIII, pp. 29 to 58, and see pp. 27-8.
  - (2) Ibid, pp. 53 and 56.
  - (3) Ibid, p. 49.
  - (4) D.B. Stronach, "Excavations at Pasargadae, Third Preliminary Report", Iran III, p. 35, nos. 28 and 29, Pl. XIV g.
  - (5) E.F. Schmidt, Persepolis II, p. 76, Pl. 43, nos. 8 and 9.
  - (6) J. de Morgan, M.D.P. VIII, p. 50.

the form of a flower were similarly embellished with lapis and turquoise segments inlaid into gold cloisons. The lion's head terminals of the magnificent gold torque (Pl. 48, 7)<sup>1</sup> and of the technically inferior bracelets<sup>2</sup> also bore the blue inlays. As well as the jewellery a number of tiny amulet beads were found in the coffin, including the dove depicted on Plate 48, 5.<sup>3</sup>

An indication of the date of the interment of the Susa sarcophagus was provided by the coins found inside it. Some showed the portrait of the satrap, Melqart (350-332 B.C.),<sup>4</sup> and this suggests that the burial belongs to the final stages of the Achaemenian period just prior to the arrival of Alexander.

The excavator suggests a similar date for a hoard of jewellery found buried in a pot at Pasargadae.<sup>5</sup> Lapis lazuli was a far less conspicuous component of this hoard. Apart from the two segmented beads referred to above, it was only used to form a tiny lion-amulet-bead<sup>6</sup> and a pendant bead enclosed in a cage of gold wire mesh, which was suspended from a circular gold ear-ring.<sup>7</sup>

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(1) J. de Morgan, M.D.P. VIII, p. 43 ff, Pl. IV.

(2) Ibid, p. 48, Pl. V.

(3) Ibid, p. 55.

(4) Ibid, p. 57.

(5) D.B. Stronach, Iran III, p. 40.

(6) Ibid, Pl. XII d.

(7) Ibid, Pl. XI a; and see p. 28.

Most of the lapis lazuli from Persepolis was found in the ruins of the Treasury, thrown away after its looting by Alexander's men. As well as fragments of the large Neo-Babylonian votive cylinders referred to on p. 128 f., a number of other objects were recovered. Some 17 beads, including one in the shape of a bovine,<sup>1</sup> and various mouldings and inlays<sup>2</sup> of lapis lazuli were recovered. The lapis inlays were variously shaped and found together with inlays of carnelian, agate and sardonyx. The excavator thought that they once probably formed a mosaic picture mounted on a gold backing, the gold having been stripped away by the looters. Among the inlays were three finely carved beards of lapis lazuli, witness to the long belief in their power.<sup>3</sup>

Perhaps the largest object of lapis lazuli found at Persepolis was a "tray".<sup>4</sup> Unfortunately neither measurements are given nor a detailed description. A sherd of another vessel was also recovered. The usual material for blue vessels in Achaemenian times was, however, Egyptian blue and some 21 have been recovered. Other materials were much commoner - for instance serpentine of which 270 vessels have been found.<sup>4</sup>

The sensitive head of a prince<sup>5</sup> worked in a blue material has been thought to be carved from lapis lazuli. It has now been established that it is formed from a glassy

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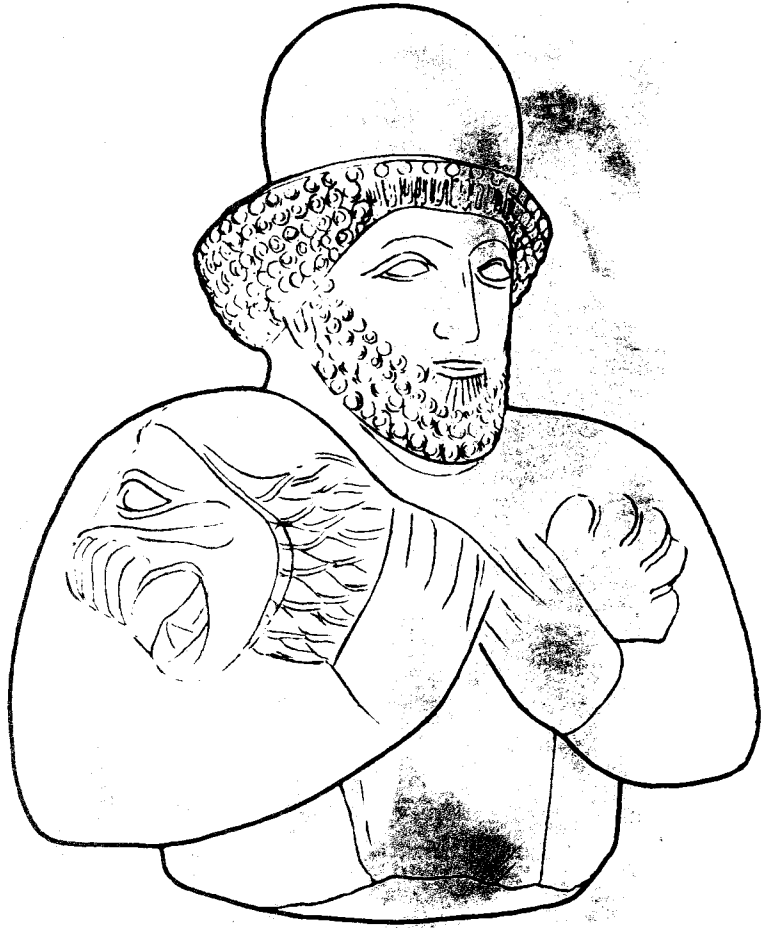
(1) E.F. Schmidt, Persepolis II, p. 76 and Table III.

(2) Ibid, p. 71, Pl. 40:3 and Pl. 42:13.

(3) Chapter I, p. 32.

(4) Persepolis II, pp. 90-91.

(5) E. Porada, Ancient Iran, Pl. 45.



material similar in composition to Egyptian blue. Another sculpture, however, now preserved in the Cleveland Museum of Art,<sup>1</sup> is recorded as being of real lapis lazuli "of a type characteristic of the famous mines at Badakhshan".<sup>2</sup> It depicts a man in Median dress clasping a lion (see figure opposite). Only the top half, carved from a single piece of the stone, is preserved and now stands 18.7 cm. high.

The man's head is closely modelled on the Persepolis relief sculptures. His body, however, is unconvincing but this may be accounted for by the fact that Achaemenian craftsmen rarely worked in the round. The lion is awkwardly clasped to the man's chest, his head and left paw against the Mede's right shoulder. His right paw is stretched against the left shoulder and shows the Assyrian trait of being reversed.<sup>3</sup> Characteristically Achaemenian is the lack of expression on the man's face. The act of subduing the animal is apparently achieved without effort. The authenticity of this unique sculpture has yet to be confirmed.

In general the dating of Achaemenian works of art is difficult, for at present little is known of the course of artistic development in this period. The majority of sculptures at Persepolis, which this piece resembles, were carved late in the reign of Darius and during the reign of his son, Xerxes. It therefore seems likely that the Cleveland lapis lazuli statuette was carved at that time, perhaps from a piece

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(1) D.G. Shepherd, "An Achaemenid Sculpture in Lapis Lazuli", Bulletin of the Cleveland Museum of Art 48, 2, pp. 18-25.

(2) Ibid, p. 20.

(3) R.W. Hamilton, "A Silver Bowl in the Ashmolean Museum", Iraq XXVIII, p. 13.

of material left over from the embellishment of Darius' Palace at Susa.

### Seals

Both cylinder and stamp seals were used, the cylinders usually by officials and the stamps by private citizens. In glyptic style there were two principal developments: one was an adaptation of Assyrian designs carved finely but stiffly, while the other was influenced by Greece and developed on more vigorous and freer lines. The most popular material was the translucent sapphirine chalcedony; and lapis lazuli was only rarely used.<sup>1</sup> The only examples located by the author all depict scenes in the Assyrianizing style. Plate 48, 1, shows the ritual slaying of a rearing lion: a Persian stabs the lion with a long spear from behind, while a man in "Median" dress shoots him from the front. The unfinished cylinder (Plate 48, 2) shows a sacred tree flanked by two rearing ibex with turned heads. The fine stamp seal (Plate 48, 3) is made of high quality lapis lazuli, royal blue in colour. A hero, not in Persian dress, grasps a winged monster firmly by the throat.

When Darius III (336-330) was defeated by Alexander at Issus (333) and again at Gau Gamela (331), the Persian era was finally at an end. Its chief claim to greatness lay in its extent and in the organization of the satrapies.

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(1) C.J. Gadd, "Achaemenid Seals" in A Survey of Persian Art, edited by Arthur Upham Pope, p. 383.

Despite the remarkable architectural and sculptural accomplishments at Persepolis and the metallurgical treasure with which it must once have been endowed, this was not a period of intense artistic achievement but rather one of commercial prosperity engendered by free and safe communications.

Alexander, the destroyer of Persian rule, was destined to live for only eight more years. On his death his vast empire rapidly disintegrated into many warring factions which eventually divided it up into smaller kingdoms. Thus the stability of the Achaemenians was at an end and commercial channels had to be carefully renegotiated before trade could flow again. Much of Iran, Mesopotamia and Northern Syria and Asia Minor fell to Seleucus, one of Alexander's generals. The Seleucids maintained themselves in Iran and Mesopotamia until the middle of the second century but Bactria was lost in the middle of the third century B.C.

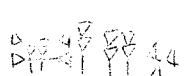
The most important aspect of their rule was the founding of new cities or the re-establishment of old cities. The Achaemenian road linking Babylon with Bactria was maintained and communications were even facilitated by the founding of further cities along its length. After Bactrian independence however control of East-West trade was lost. Archaeologically, this is at present a comparatively barren period and little is known of it.

## CHAPTER THREE

### Lapis Lazuli: The Literary Background

While the archaeological evidence discussed in the preceding chapter records the physical presence or absence of lapis lazuli, there is an additional source of information, that of the contemporary texts, to provide knowledge of why and by whom the stone was used. Lapis lazuli is mentioned in a wide variety of texts and languages - in myths and legends of many lands, in building inscriptions, in tribute lists, and the like. In this chapter the evidence found in such literary sources will be discussed.

#### Etymology

The earliest of the cuneiform languages, Sumerian, expressed the material, lapis lazuli by the word  $Z\acute{A}Z\acute{A}.G\grave{I}N$  . This was first established by Lyon in 1889,<sup>1</sup> when he published an inscription on an actual disc of lapis lazuli, which stated that it was made of  $Z\acute{A}Z\acute{A}.G\grave{I}N$ . The inscription reads as follows:

"For Ninurta, his lord, Kadashman-Turgu, son of Nazi-maruttash, a disc of bright lapis lazuli he had made and gave for his life."<sup>2</sup>

- (1) Lyon: "On a lapis lazuli disc bearing a cuneiform inscription", Proceedings of the American Oriental Society of 1889, pp. cxxxiv ff.
- (2) H.V. Hilprecht, B.E. I/1, Series A, Pl. 23, no. 61. Mr. C.B.F. Walker kindly translated this text from the cuneiform.

Another lexicographical optimum, i.e. an object bearing an inscription describing its material, occurs on the fine seal of lapis lazuli presented by Marduk-zakir-shuni to Marduk.<sup>1</sup>

Literally ZA.GÌN means mountain stone (ZA stone, GÌN mountain).<sup>2</sup> Campbell Thompson suggested that the stone attracted this name through the association of the "idea 'blue' as represented by the blue of the distant Persian mountains as seen from the flats of Mesopotamia".<sup>3</sup> If, however, an actual piece of the stone is compared in colour to the hazy purple of distant mountains the comparison is untenable. Yet it is perhaps of interest that painters of many period have used blue in preference to purple for the representation of such distant mountains.

A number of other hard blue materials, as well as lapis lazuli, were also described by the term ZĀ.ZA.GÌN. For instance a votive axe of the Kassite period, made of false lapis or "Egyptian blue", bore a dedicatory inscription which described it as being made of ZĀ.ZA.GÌN.<sup>4</sup>

It is probable that bright blue azurite or native copper carbonate was similarly designated. Azurite was used in antiquity both as an inlay and, powdered, as a blue

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- (1) See p. 127: and F.H. Weissbach, Babylonische Miscellen, p. 16, Pl. 6, 2.
  - (2) R. Campbell Thompson, A Dictionary of Assyrian Chemistry and Geology, p. 129: gin "mountain" = gin(n)u, see C.A.D. Vol. 5, G, p. 82.
  - (3) R. Campbell Thompson, Dictionary of Assyrian Chemistry, p. 129.
  - (4) H.V. Hilprecht, B.E. I/1, Series A, p. 52, Pl. 27, no.78.

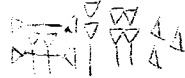
pigment.<sup>1</sup> Campbell Thompson suggested that there was a special mortar for powdering azurite called ZÁ<sup>´</sup>NA.ZA.GIN.NA.<sup>2</sup> This reading is now disputed and the word has recently been translated simply as a cup, connected in some way with ZA.GIN, rather than as a mortar. While it seems probable that azurite and the blue paint made from it were known as ZÁ<sup>´</sup>ZA.GIN, definite proof is lacking. An indication that it was so called is suggested by those texts which describe various objects as being made of ZÁ<sup>´</sup>ZA.GIN (or the Akkadian <sup>abān</sup>uqnū, see below), which are more properly made of wood painted blue than of a hard stone - for instance the flute of Tammuz<sup>3</sup> and the lapis lazuli gate at Barsippa.<sup>4</sup>

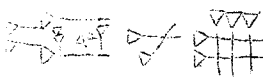
Blue glass<sup>5</sup> and blue glazes<sup>6</sup> were also described by the sign ZÁ<sup>´</sup>ZA.GIN, and yet another meaning is probably the adjective "pure" or "bright", for in some lexical lists

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- (1) Lucas first established that blue pigment was made from azurite and not lapis lazuli. It was used in Egypt as early as the IVth Dynasty. A. Lucas, Ancient Egyptian Materials and Industries, pp. 340-344. In Mesopotamia blue pigment occurs in the famous frescoes at Mari and Til Barsib. True ultramarine made from powdered lapis lazuli was not used before the eleventh century A.D., see Chapter I, p.21.
  - (2) R. Campbell Thompson, Dictionary of Assyrian Chemistry, p. 206.
  - (3) A.N.E.T., p. 109, col. i, line 49.
  - (4) M. San Nicolo and A. Ungnad, Neubabylonische Rechts- und Verwaltungsurkunden I, p. 29, no. 18.
  - (5) H. Zimmern, "Assyrische chemisch-technische Rezepte", Zeitschrift für Assyriologie 36, p. 182.
  - (6) R. Koldewey, The Excavations at Babylon, p. 45: and S. Langdon, Die Neubabylonischen Königsinschriften, V.A.B. 4, p. 127, line 16 and p. 119, line 46.

ZÁZA.GIN is equated with ebbu.<sup>1</sup>

The same cuneiform writing, invented by the Sumerians, was adapted by the Semitic Akkadians to write their own language. They took over many Sumerian words, which were then used as ideograms for the corresponding Akkadian words.

Thus  was still the sign for lapis lazuli, but was pronounced in Akkadian as abanuqnû.<sup>2</sup> In addition uqnû was sometimes written phonetically - thus uq-nu-u

 .<sup>3</sup>

As in Sumerian, abanuqnû could indicate one of four blue materials:

1. real lapis lazuli
2. false lapis lazuli or "Egyptian blue" <sup>4</sup>
3. azurite, and
4. blue glass or glaze.

It could also be translated as "pure" or "bright". With the determinative šipat for wool, instead of aban for stone, it meant blue-dyed wool.<sup>5</sup> Basically, therefore, ZA.GIN/uqnû appears to mean any material which is blue in colour.

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(1) C.A.D., Vol. 4, E, p. 2, col. ii, no. 3.

(2) For vocabularies giving Sumerian words for stones with their Akkadian readings see: V. Scheil, "Vocabulaire de Pierres et d'Objets en Pierre", R.A. 15, p. 116, line 50 ff.; and H.C. Rawlinson, The Cuneiform Inscriptions of Western Asia, Vol. IV, p. 18, no. 3 iv 8.

(3) Rawlinson, ibid, Vol. IV, p. 18, no. 3, iv 8 and 18.

(4) In only two letters of the Ugaritic correspondence, written in Akkadian, there are, however, different words for real and false lapis: the real remains abanuqnû, while the false becomes abankammu. J. Nougayrol, Textes Accadiens des Archives Sud, M.R.S. IX, p. 222, note 1.

(5) Ibid, pp. 41-2, 47 and 81-3. In Sumerian blue wool is <sup>SIP</sup>ZA.GIN, K.A.R. 71 : 19 f.

Equated in lexical texts with "bright lapis lazuli", that is with uqnû ellu, uqnû ebbu, uqnû namri, is the Akkadian word zagindurû, a loan word from Sumerian  $Z\acute{A}ZA.G\grave{I}N.DURU_5$ .<sup>1</sup> As we shall see, however, zagindurû appears to have a characteristic colour which is not blue but greenish. One text reads "its beautiful meadowland, which looks as if overlaid with zagindurû".<sup>2</sup> Again Sumerian  $\check{s}e.za.gin.duru_5$  corresponds to:

1. Akkadian abahšinnu - "cereal harvested when still green; and
2. šein hunnuti, another type of cereal not yet closely defined.<sup>3</sup>

As well as meaning greenish, zagindurû also appears to be a glaze or glass, for one text reads "if you intend to produce (glass the colour of) zagindurû".<sup>4</sup> It therefore seems to have little in common with lapis lazuli, as little as do some of the following interpretations of the puzzling bilingual vocabulary mentioned earlier. For instance, Sumerian  $Z\acute{A}ZA.G\grave{I}N G\acute{U}.TU$  is equated with Akkadian ša kišadu asunnatum, which can be translated as "the grey on the neck

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- (1) Hh XVI 53 ff., Hg.D 78 and Diri III 90 ff. as quoted in C.A.D., Vol. 21, p. 11.
  - (2) F. Thureau Dangin, T.C.L. III, p. 36, 229: and K.A.H. 2, 141, "ugāršū asmu ša ki zagindurê sirpa šaknuma".
  - (3) Hh XXIV 153 and 159: and Practical Vocabulary Assur 29, as quoted in C.A.D., Vol. I, Part 1, p. 3 and Vol. 6, p. 237.
  - (4) H. Zimmern, Z.A. 36, p. 182, 13: šumma zagindurâ ana epēšika.

of a dove". Other varieties of ZA.GIN/ugnû have been interpreted as "the dark sheen of a raven's neck", "Homeric wine-coloured", "starry" and "variegated".<sup>1</sup>

### Husāru

In discussing the Old Assyrian Cappadocian texts, Landsberger has suggested that one of the unidentified stones may also represent lapis lazuli. He points out that the ideogram <sup>ZÁ</sup>ZA.GIN occurs infrequently - in fact only twice. He therefore proposes that another word may describe lapis lazuli and suggests husāru.<sup>2</sup> This word occurs frequently in the texts, where it is used to describe cylinder seals, a goblet and incrustation on a throne, as well as other objects; and the material is reported to have come from Ashur.<sup>3</sup>

Lewy, on the other hand, disagrees with Landsberger and has suggested that Husārum (sic.) may be haematite.<sup>4</sup> Though as recently as this year another word in these texts has been identified as haematite,<sup>5</sup> nonetheless Lewy's arguments do seem to prove that whichever material husāru may describe it is not lapis lazuli. He points out that

- (1) V. Scheil, R.A. 15, p. 116; and R. Campbell Thompson, Dictionary of Assyrian Chemistry, p. 130.
- (2) B. Landsberger and K. Balkan, "Die Inschrift des Assyrischen Königs Irişum, gefunden in Kültepe, 1948", Bulleten XIV, p. 235.
- (3) C.A.D. Vol. 6, H. p. 257.
- (4) J. Lewy, "Old Assyrian husārum and Sanchunyaton's story about Chusor", I.E.J. 5, pp. 154-162.
- (5) B. Landsberger, "Tin and Lead - the Adventures of Two Vocables", J.N.E.S. XXIV, p. 285, note 1.

in three of the twenty commercial and legal texts which mention it, husārum is linked with amûtum, a kind of meteoric iron.<sup>1</sup> Both amûtum and husārum are dealt with by the same office in Ashur, which suggests that husārum must in some way be associated with iron, Lapis lazuli, on the other hand, is normally associated with gold, silver or carnelian. Again amûtum is much more valuable than husārum - while 40 shekels of silver are offered for one shekel of amûtum, only  $2\frac{1}{2}$  are offered for one of husārum. Even at this early date, when iron was rare and therefore valuable, it is unlikely that lapis lazuli should have been, in comparison, so cheap. Thirdly, one text describes husārum as bulky, which lapis is not - it is on the contrary of a high density. Another text mentions powdered husārum; as lapis lazuli was not crushed for use in ultramarine until about the eleventh century A.D.,<sup>2</sup> this finally invalidates the equation between husārum and lapis lazuli and we may therefore disregard Landsberger's tentative suggestion.

### Ugaritic

From the sixteenth to the twelfth centuries B.C. a further adaptation of the cuneiform script was made in the Ugaritic kingdom. The script was greatly simplified and written alphabetically with few signs. The Akkadian

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(1) W. von Soden, Akkadisches Handwörterbuch, Band I A-L, p. 47.

(2) See note (1) on page 142.

word for lapis lazuli, uqnû, was however adopted and became 'èqnè. Ugaritic used no determinatives and 'èqnè could therefore mean one of a variety of things; for instance in a Hymn to Baal it clearly meant the stone, in this case probably real lapis lazuli:

"the rocks shall yield thee much silver  
the mountains the choicest of gold,  
they shall yield thee the noblest of gems (?);  
and (so) build a mansion of silver and gold,  
a mansion of brilliant (stones even) lapis lazuli."<sup>1</sup>

In another text, however, it seems likely that it was describing blue wool. This is in a list of tribute from Niqmadu, king of Ugarit, to the Hittite monarch, Shuppiluliumas, which catalogues a collection of gifts to be given to seven different persons at the Hittite court.<sup>2</sup> The total of 'èqnè listed on this tablet is over a thousand shekels, an enormous quantity if it were of lapis lazuli. However, similar tribute lists of the Ugaritic king, written in Akkadian, specify that the uqnû given was šipat uqnû, or blue-dyed wool.<sup>3</sup> Therefore, we can assume that the 'èqnè in the Ugaritic tribute list also refers to blue wool. This is particularly likely when the siting of Ras Shamra is remembered, for it lies on the same Mediterranean seaboard as Tyre and doubtless manufactured the famous purple dyes.

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(1) G.R. Driver, Canaanite Myths and Legends, p. 97, col. ii, lines 15 to 19.

(2) J. Nougayrol, Textes Accadiens des Archives Sud, M.R.S. IX, pp. 44-46.

(3) Ibid, pp. 41-42, 47 and 81-83.

Greek and Hebrew

It was once thought that the Greeks adopted the Akkadian word uqnû for a blue stone, which became kyanos.<sup>1</sup> Goetze, however, pointed out that a more likely etymology was from the cuneiform Hittite word, kuwanna, which means both copper and bead, but when it carries the prefix NA stone, it probably represents azurite as well.<sup>1</sup> Theophrastus describes three kinds of kyanos - Egyptian, Scythian and Cypriot - all of which are ground up and used as pigments.<sup>2</sup> The Egyptian kyanos is clearly "Egyptian blue" or frit. Theophrastus himself informs us that Egyptian kyanos is manufactured. The Cypriot is probably azurite and came from the rich copper mines on that island. It has been suggested that the Scythian was the genuine stone,<sup>3</sup> but there is some doubt on this, for it is generally accepted that lapis lazuli was not used as a pigment until much later. It therefore seems that kyanos (and Hittite kuwanna) represents blue materials other than lapis lazuli.

Another Greek word for blue stones, sappheiros, came from the Hebrew sappir.<sup>4</sup> Theophrastus describes sappheiros

- (1) A. Goetze, "Contributions to Hittite Lexicography", Journal of Cuneiform Studies I, p. 310, note 23.
- (2) E.R. Caley and J.F. Richards, Theophrastus on Stones, p. 57, Lap. 55.
- (3) Ibid, p. 183.
- (4) The late E.A. Speiser suggested that the word šoham and not sappir should be translated as lapis lazuli: "The Rivers of Paradise", Festschrift Johannes Friedrich zum 65. Geburtstag, pp. 180-181. A more normal reading of šoham, derived from Akkadian šantu stone, is carnelian.

as dark and "spotted with gold",<sup>1</sup> while Pliny says that "gold ... gleams in the sappheiros of the East".<sup>2</sup> A passage in Job also comments on the pyrites - "The stones of it are the place of sappir: and it hath dust of gold".<sup>3</sup> Sappheiros has therefore been identified as lapis lazuli, which is speckled with golden flecks of iron pyrites. The Greeks, unlike many of their contemporaries, appear to have differentiated between real lapis lazuli and other blue materials.

### Old Persian

An important text for the history of lapis lazuli is the building inscription of Darius the Great at Susa, written in the Old Persian form of the cuneiform script. In Darius' inscription, lapis lazuli is mentioned and described as kāsaka hya kapautaka, or the stone that is blue.<sup>4</sup> What form the Middle Persian for lapis lazuli took is unfortunately unknown; but modern Persian and Arabic use a similar formula, the stone that is blue or azure - sangi lajward. It is the same form in mediaeval Latin by which we know the stone today, lapis lazuli.

As suggested above, the first people to differentiate between the real blue stone, lapis lazuli, and its substitutes of azurite, frit and the like, seem to have been the

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(1) Caley and Richards, Theophrastus on Stones, p. 50, Lap. 23.

(2) Pliny, N.H., XXXIII, xxi, 69.

(3) The Book of Job, Chapter 28, verse 6.

(4) R.G. Kent, Old Persian, p. 178.

Greeks, although the Hebrew sappir may also have been confined to describing lapis lazuli. Before them, however, there was considerable confusion in the definition of blue materials. The same word ZA.GIN or uqnû, even with the same determinative ZÁ or aban, could mean one of a number of things: real lapis lazuli, false lapis lazuli, azurite, glazes and glass and objects painted blue. This imprecision has made the study of ancient texts rather unsatisfactory, for even when ZÁ-ZA.GIN or aban uqnû is clearly written we still do not know to which specific blue material this is referring.

### The Texts Themselves

The blue stones are mentioned in a wide variety of texts - in royal and historical inscriptions, in lists of temple chattels, and in myths, legends and ritual. These are discussed on the following pages in their separate groups.

### Historical Texts

The archaeological evidence, which provides a basic framework of information on the use of the stone, is subject to error - certain periods are not yet sufficiently explored, and the recording of early excavators was at times somewhat erratic. Therefore the evidence of historical texts is of considerable value because it both amplifies and extends the archaeological framework, already established.

Some of the most valuable records historically are those of day-to-day affairs, which mention, for instance, that the foundation deposit of a certain palace or temple, built in the ninth year of such and such a king, includes lapis lazuli. This provides definite written evidence of the use of the stone at that period.

The earliest time for which we have such historical records is the Early Dynastic, though the texts referring to this period are not contemporary but were written down some centuries later. They do, however, reflect the oral tradition of the Early Dynastic era, and while alone they could not serve as proof of the use of the stone at that time, they do act as valuable corroboration of the archaeological evidence. The epic of Enmerkar and the Lord of Aratta is a case in point. Enmerkar, king of Uruk, who probably reigned in E.D. II, threatens the Iranian state of Aratta with war unless they will exchange lapis lazuli and other precious stones for grain (see p. 58). In Early Dynastic I the lapis route appears to have been closed. We read this epic of a trade war won by Enmerkar in Early Dynastic II - and archaeologically we find that supplies of the stone are abundant both in E.D. II and particularly in III.

In the Akkadian period also the relevant texts are not contemporary but are nonetheless of considerable value. Woolley once suggested that there was a shortage of the stone in the Akkadian period because the Sargonid graves at Ur

did not produce much fine quality lapis. When, however, it is remembered that Ur was a vassal city constantly trying to revolt and then being subdued, it is hardly surprising that her citizens declined sharply in wealth at this epoch.

(see pp. 91-92). The best materials would have gone to the capital city, Agade, still lost beneath the silt of the Euphrates. The text "The Curse of Agade" specifically records that the treasuries of Agade were overflowing with precious materials, including much lapis lazuli (see p. 90).

In the state of semi-anarchy which prevailed after the Guti raids had destroyed the Akkadian empire, trade was still possible, perhaps by agreement with the Guti overlords.

Gudea (c. 2150 B.C.), ensi of Lagash, indulged in extensive trade: he even went so far as to crush the Elamite city of Anshan and seized its booty.<sup>1</sup> Ships from Makkan, Meluhha and Dilmun brought wood to Lagash.<sup>2</sup>

Gudea describes where he obtained his material and how he built a temple in some detail. The plan of the temple, inscribed on a lapis lazuli tablet, was brought him by the god Nindub.<sup>3</sup> Gudea then built the temple "to shine forth like the sun-god out of the clouds: he raised it up like a mountain of lapis lazuli ...".<sup>4</sup> He "amassed carnelian and

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(1) G.A. Barton, The Royal Inscriptions of Sumer and Akkad, p. 185, Statue B, VI, 64 ff.

(2) Ibid, p. 191, Statue D, IV, 7 ff.

(3) Ibid, p. 211: and see a better translation in A. Falkenstein und W. von Soden, Sumerische und Akkadische Hymnen und Gebete, p. 143, Cyl. A, VI, 3-5.

(4) Barton, ibid, p. 231: Falkenstein und von Soden, ibid, p. 161, Cyl. A, XXIV.

lapis lazuli; he laid it in the corners";<sup>1</sup> and "deposited copper, tin, blocks of bright lapis lazuli and carnelian from Meluhha ...".<sup>2</sup>

Both Ur-nammu (2113-2096) and Shulgi (2095-2048) of the Third Dynasty of Ur mention lapis lazuli. There is a strange hymn recording the death of Ur-nammu and his actions after death. He gave presents to the deities of the nether world, several of which were of lapis lazuli - "a golden sceptre of the enu-ship with an artistic handle of lapis lazuli"; "a seal with a lapis lazuli handle, 'the fate of the nether world'"; "a cylinder seal of lapis lazuli hanging from a dagger"; and "a measuring line of lapis lazuli of one Ninda length".<sup>3</sup>

Shulgi records making a statue of himself in lapis and gold and, early in his reign, mentions a throne of lapis lazuli.<sup>4</sup>

In addition to these royal texts there are various references to business transactions. During the reign of Amar-Suen (2047-2039) we hear of an amulet in the form of a crouching calf of lapis lazuli.<sup>5</sup> We have an interesting inventory of various departments of the workshop in the

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(1) Falkenstein und von Soden, ibid, p. 168, Cyl. B, III, 13.

(2) Ibid, p. 177, Cyl. B, XIV, 13.

(3) G. Castellino, "Ur-nammu, Three Religious Texts", Z.A. 52, p. 23.

(4) A. Falkenstein, "Ein Lied auf Shulgi", Iraq XXII, p. 143, line 22.

(5) L. Legrain, Business Documents of the Third Dynasty of Ur, U.E.T. III, p. 199, no. 101.

eleventh year of Ibbi-Suen (2029-2006). Three of the departments, the sculptors' shop, the goldsmiths' shop and the lapidarys' shop, all list lapis lazuli among their materials.<sup>1</sup> There are also various receipts for gold to cover and decorate objects of lapis lazuli.<sup>2</sup> A list of stones for necklaces mentions 62 beads of lapis lazuli.<sup>3</sup> One text records the delivery of luxury goods to "the metal and lapis house of the great store"<sup>4</sup> and another describes the gift of a king - a weapon of lapis lazuli, plated with gold.<sup>5</sup>

A number of references in the succeeding Isin-Larsa period are known. Two inscriptions of the Larsa king, Abi-sarê (1905-1895), dated to his first and eighth years, refer to the use of lapis lazuli.<sup>6</sup> In the latter Abi-sarê describes a statue made of carnelian and lapis lazuli. Bur-Sin of Isin (1894 - ? ) mentions adorning one of his temples with gold, silver and lapis lazuli.<sup>7</sup>

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(1) L. Legrain, ibid, p. 259, no. 1498, ob. iv.

(2) Ibid, p. 218, no. 448, and 219, no. 482.

(3) Ibid, p. 227, no. 733.

(4) Ibid, p. 213, no. 345.

(5) Ibid, p. 215, no. 378.

(6) Figulla and Martin, Letters and Documents of the Old Babylonian Period, U.E.T. V, no. 547, line 5: and C.J. Gadd and L. Legrain, Royal Inscriptions, U.E.T. I, p. 92, col. ii.

(7) C.J. Gadd and L. Legrain, ibid, p. 16.

References are also made to lapis lazuli in the following Old Babylonian period. Texts from Mari, dating approximately to 1850 B.C., consist of a number of inventories listing such objects as cylinder seals and necklaces of lapis lazuli.<sup>1</sup> Shamshi Adad I of Assyria (1814-1782), who conquered Mari, records repairing the temple of Enlil in Ashur, the walls of which were studded with gold, silver, lapis lazuli and carnelian.<sup>2</sup>

Some of the kings of the First Dynasty of Babylon, who reigned after Hammurabi, have left date-lists, in which they mention using lapis lazuli. These are Abi-ešuh (1711-1684),<sup>3</sup> the fourth year of Ammisaduqa (1646-1626)<sup>4</sup> and Šamšuditana (1625-1595).<sup>5</sup> Finally there are a number of Old Babylonian letters and inventories not ascribed to any particular reign.<sup>6</sup>

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- (1) J. Bottéro, Textes Economiques et Administratifs, A.R.M.T. 7, p. 131 ff.: and M. Birot, Textes Administratifs de la Salle 5 du Palais, A.R.M.T. 9, p. 310, no. 254.
  - (2) E. Ebeling, B. Meissner und E.F. Weidner, Die Inschriften der Altassyrischen Könige, p. 22, lines 2, 20 to 3, 2: and L.A.R. I, para 43 a.
  - (3) Manchester Cuneiform Studies IV, p. 26, no. 16 and p. 29, no. 90: and A. Goetze, "The Year Names of Abi-ešuh", J.C.S. V, p. 100.
  - (4) M.C.S. IV, p. 49, no. 465.
  - (5) M.C.S. III, p. 76; edited in Ebeling und Meissner, Reallexikon der Assyriologie II, p. 191, col. i: and C.A.D. Vol. 16, §, pp. 207-208.
  - (6) CT 29 12:34, edited in A. Ungnad, Babylonische Briefe aus der Zeit der Hammurabi-Dynastie, pp. 103-5, no. 125, mentions a cylinder seal of lapis: G.R. Driver, Letters of the First Babylonian Dynasty, p. 28, no. 74 gives a letter from Shamash to Danani-Shamash, listing some precious pieces of lapis: and C-F Jean, Contrats de Larsa, TCL X, an inventory of the treasure of the Temple of Shamash, lists a necklace of lapis lazuli.

The Middle Babylonian Period was a time of intense diplomatic activity between four great powers - Egypt, Hatti, Mitanni and Babylonia. Their monarchs corresponded frequently, usually asking why they had not been sent more lavish presents. While the Kassite kings of Babylonia constantly begged the Egyptian pharaohs for more and more gold, they in their turn were asked to send lapis lazuli in an unending stream. The Mitannian kings also sent lavish gifts of lapis lazuli. This suggests that trans-Iranian trade was well-organized at this time - not a surprising fact as both the Kassites and the Mitanni came from the Iranian mountains.

Egyptian interest in acquiring lapis lazuli is manifested in the reign of Tuthmosis III (1490-1436), who seized booty including the blue stone from the cities of Tunip and Megiddo.<sup>1</sup> The Theban tomb inscription of his High Priest of Amun, Men-kheper-Re-sereb, extols Tuthmosis III's victories and the consequent tribute of "silver, gold, lapis lazuli, turquoise and every august costly stone".<sup>2</sup>

The correspondence preserved in the Egyptian archives at el Amarna only began in 1450 and ceased with the death of Akhnaten or Amenophis IV. For the period they cover, these letters vividly illumine the diplomatic activity of the great Near Eastern kings. Tushratta of Mitanni gives his daughter Tatuhepa to Amenophis III (1405-1367) as a

(1) A.N.E.T., p. 237 and p. 239.

(2) Ibid, p. 249.

wife, and sends with her various presents including some lapis lazuli.<sup>1</sup> He also sends Amenophis III gifts of lapis on several other occasions,<sup>2</sup> and he send gifts to his widow, Ty.<sup>3</sup>

Two of the Kassites, Kadashman-harbe and Kadashman Enlil I also sent presents to Amenophis III to be given to their sister, another of his wives.<sup>4</sup>

To Amenophis III's successor, the revolutionary Akhnaten (1367-1350), who took little or no interest in foreign affairs, Mitanni, Babylon, and for the first time Assyria, sent gifts. Tushratta of Mitanni sent a lavish donation of jewels, pendants and ear-rings, breast jewels, sets of jewels and rosaries, as well as, of course, cylinder seals, all made of lapis.<sup>5</sup> The first of the dated Kassite kings, Burnaburiaš II (1375-1347) also despatched gifts, including many minas of the unworked stone and lapis cylinder seals.<sup>6</sup> In one of his letters, Burnaburiaš upbraids Akhnaten, reminding him of his plentiful gifts:

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- (1) J.A. Knudtzon, Die el-Amarna Tafeln, V.A.B. 3, Letter 22, col. i, line 10.
  - (2) Ibid, Letters 19, 21 and 22.
  - (3) Ibid, Letter 26.
  - (4) Ibid, Letter 2: and S.A.B. Mercer, The Tell el-Amarna Tablets, Vol. I, p. 11, Letter 3.
  - (5) Knudtzon, V.A.B. 3, Letters 25, 27 and 29.
  - (6) Ibid, Letters 7 to 11 and 13: and Mercer, ibid, pp. 23, 28, 31 and 33.

"Between kings there is brotherhood, friendship, alliance, and friendly relations: there is a wealth of precious stones, silver and gold. Ten lump offerings (?) of beautiful lapis lazuli, I have sent thee as a present. For the mistress of thy house I have sent (only) 20 seal rings of beautiful lapis lazuli ... May much gold be brought from thee ...! Let it be brought at the end of this year, that I may quickly carry through my work."<sup>1</sup>

At this time, Assyria begins to rise to power, Assur-uballit (1365-1330) doubtless for reasons of prestige, also sends presents to the Egyptian pharaoh "an excellent chariot, two horses and one [abān u-hi-na] of fine lapis lazuli"<sup>2</sup> and "one seal of beautiful lapis lazuli".<sup>3</sup>

These detailed archives end with Akhnaten's death. His son, Tutankhamun, deserted his father's new capital at El Amarna and restored the worship of Amun, fashioning his image in "fine gold, lapis lazuli, turquoise and every august costly stone": he restocked the temple of Amun with gold, silver, lapis lazuli, turquoise etc.<sup>4</sup> As is well shown by the grave goods in his tomb, Egypt had abundant supplies of lapis lazuli during his reign and Tutankhamun was doubtless still courted with rich gifts by other Near Eastern monarchs. A tomb text belonging to Huy, his viceroy in Nubia, lists among the tribute of Retenu or Nubia silver, gold, lapis lazuli, turquoise and every august costly stone.<sup>5</sup>

(1) Mercer, ibid, p. 37.

(2) Ibid, p. 57 and Knudtzon, V.A.B. 3, Letter 15.

(3) Mercer, ibid, p. 59.

(4) A.N.E.T., p. 252, col. i.

(5) Ibid, p. 249, col. i.

suggesting that Nubia was the source of lapis lazuli for Egypt at this time.<sup>1</sup> This may simply be a formula for rich gifts or tribute: it could, of course, be false lapis: or the real stone could have been sent by sea to Nubia from the Persian Gulf. No lapis lazuli mines have, however, been discovered in Nubia.

Like the Pharaohs, the Hittite kings were also concerned with acquiring supplies of lapis lazuli and a letter of Hattušiliš III (1275-1250) to Kadashman Enlil II (1279-1265), grumbling at the drying up of supplies suggests that they also were given lapis lazuli in earlier reigns by the Kassite kings.<sup>2</sup> Another of their sources was Ugarit. A diplomatic crisis was caused when the Ugaritic king tried to substitute false lapis for the real stone as tribute to the Hittite monarch, who was a "grand amateur de lapis lazuli".<sup>3</sup> The Ugaritic representative at the Hittite court, Takuhlu, wrote urgently pleading for supplies of the real stone because "le coeur du roi à l'égard de mon maître est très mal disposé".<sup>4</sup>

Shuppiluliumaš (1375-1335) sent Huria of Egypt a gift including a single large stone of lapis lazuli.<sup>5</sup>

- (1) See note (1) on page 115.
- (2) H.H. Figulla, E. Forrer und E.F. Weidner, Keilschrifttexte aus Boghazköi I, 10, rev. 67, 69, 71 and 72, ed. by D.D. Luckenbill, "Hittite Treaties and Letters", A.J.S.L. XXXVII, p. 200 ff.: and see also E. Cavaignac, "Synchronismes assyriens, égyptiens et hittites (XIV-XIII siècles)", R.H.A. II, p. 186 ff.
- (3) J. Nougayrol, Textes Accadiens des Archives Sud, P.R.U. IV, M.R.S. IX, p. 224, line 23.
- (4) Ibid, p. 224, line 15.
- (5) J.A. Knudtzon, V.A.B. 3, Letter 41.

A number of inventories of treasure of the Middle Babylonian period list a large amount of lapis lazuli and these serve to corroborate the evidence of the Amarna letters that lapis was in plentiful supply in the second half of the second millennium B.C. A Kassite list of the reign of Nazimaruttaš (1323-1298) found at Nippur describes golden caskets with lids of lapis lazuli, and cylinder seals, breast plates, and earrings of the blue stone.<sup>1</sup> A large number of inscribed lapis lazuli discs was also found at Nippur.<sup>2</sup> These were dedicated to the gods by Kurigalzu, Nazi-maruttaš, Kadashman-Turgu (1297-1280) and Burnaburiaš II, son of Kadashman Enlil I.

A fragmentary inventory of the period from Nuzi mentions only "... uqnú ...".<sup>3</sup> And finally a series of four huge inventories of the treasure of the Lady Ningal, goddess of Qatna, lists a great variety of jewels, nearly all of which have some lapis lazuli in their composition.<sup>4</sup> Some of the more important pieces are a golden dagger with a hilt of the blue stone,<sup>5</sup> a human figurine and many cylinder seals.

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- (1) L. Legrain, Historical Fragments, P.B.S. XIII, p. 102 ff, no. 80. For similar list see A.T. Clay, Documents from the Temple Archives at Nippur dated in the reigns of the Cassite Rulers, P.B.S. II/2.
  - (2) H.V. Hilprecht, B.E. I/1, Series A: nos. 28, 30, 32, 36, 41-2, 45-9, 53, 54, 58-64 and 71.
  - (3) E-R Lacheman, "Nuziana II", R.A. XXXVI, p. 150.
  - (4) J. Bottero, "Les Inventaires de Qatna", R.A. XLIII, pp. 1-40, and pp. 137-213.
  - (5) Ibid, p. 13, no. 7.

Before leaving the Middle Babylonian period, it is relevant to note here that the textual evidence of sending gifts of cylinder seals has recently been supported by an archaeological discovery in the city of Thebes, where a large cache of finely carved Kassite cylinder seals of lapis lazuli has been found.<sup>1</sup>

### The Middle Assyrian Period

Assyria began to regain influence and power during the reign of Assur-uballit, who, as we have seen above, sent gifts including a little lapis, to Akhnaten. Adad-nirari I (1307-1275) inflicted a defeat on the Kassite Nazi-maruttaš, and also extended Assyrian influence to the North, while Tukulti Ninurta I (1248-1208) continued to make further conquests in the North and West. He raided Babylonia, temporarily interrupting Kassite rule. He certainly had access to supplies of lapis lazuli, for there is a part of a nacehead of that stone in the British Museum, inscribed with his name.<sup>2</sup> Sennacherib records rescuing a lapis lazuli seal of Tukulti Ninurta's from Babylon.<sup>3</sup>

Ninurta-apal-Ekur (1192-1180) gave his daughter, a high priestess, a necklace of lapis lazuli.<sup>4</sup> However, the Prism Inscription of Tiglath Pileser I (1115-1077) describes his embellishments of the temple Anu-Adad at Ashur, mentioning

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(1) See Chapter II, p. 120.

(2) L.A.R. I, para. 204.

(3) D.J. Wiseman, "The Vassal Treaties of Esarhaddon", Iraq XX, p. 21.

(4) E.F. Weidner, Die Inschriften Tukulti Ninurtas I, p. 51, no. 49

many stones by name, but not, surprisingly, lapis lazuli. Since it had a high prestige value among Near Eastern royalty at the time, it is possible that supplies were interrupted.

### The Neo-Assyrian Period

The shortage of lapis lazuli towards the end of the Middle Assyrian period appears to have lasted into Neo-Assyrian times, for it is not included in the tribute of Tukulti Ninurta II (890-884).<sup>1</sup> His successor, Assurnasir-pal (883-859) also makes no mention of the stone when he describes his palace and its ivory furniture at Calah,<sup>2</sup> although he does claim to have given a little to the shrine of Ninurta.<sup>3</sup> Shalmaneser III (858-824) dedicated some pieces in a foundation deposit for the walls of Ashur,<sup>4</sup> while his Babylonian contemporary, Marduk-zakirshuni, also dedicated a large lapis seal to Marduk.<sup>5</sup>

Adad-nirari III (810-783) extended the Assyrian sphere of influence by conquering the Medes, a feat repeated by Tiglath Pileser III (745-727), who extracted tribute of livestock and lapis lazuli from them.<sup>6</sup> Once again Mesopotamia had won access to the people who acted as middle-men

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(1) L.A.R. I, para. 410 f.

(2) Ibid, para 489 f.

(3) D.J. Wiseman, "A new Stela of Assurnasir-pal II", Iraq XIV, p. 31.

(4) E. Michel, "Die Assur-texte Salmanassars III (858-824)", W.O. 2, pp. 42-45.

(5) F.H. Weissbach, Babylonische Miscellen, p. 16, Pl. 6, 2: and see p. 127.

(6) L.A.R. I, para 768.

on the lapis route. Sargon II (721-705), Sennacherib (704-651) and Esarhaddon (680-669) continued to obtain their supplies of the stone from the Medes.

Sargon gave precious materials, including lapis lazuli, to various temples<sup>1</sup> and the dedicatory tablets for the "Palace without a Rival" at Dur Sharrukin were made of gold, silver, lapis lazuli, jasper, etc.<sup>2</sup> In addition to obtaining supplies from the Medes, he also acquired some from the Temple of Haldis in Musasir, whose treasure he seized.<sup>3</sup>

Sennacherib included lapis among his dedicatory offerings for a canal<sup>4</sup> and for the Temple of the New Year's Feast.<sup>5</sup> He also adorned the walls of the "Palace without a Rival" with lapis lazuli.<sup>6</sup>

His successor, Esarhaddon, boasted of Median tribute of "mighty steeds, lapis lazuli and the produce of the land".<sup>7</sup> He did, however, experience difficulties in the collection of the stone, not only in the delivery from the tribute land to his agent<sup>8</sup> but also in transporting the material

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(1) L.A.R. II, para 70.

(2) Ibid, para 73, 110 and 112.

(3) Ibid, para 172: and F. Thureau-Dangin, Une Relation de la Huitième Campagne de Sargon, T.C.L. III, p. 53, lines 350 ff.

(4) L.A.R. II, para 335.

(5) Ibid, para 440.

(6) Ibid, paras. 389 and 410.

(7) Ibid, paras. 540 and 566.

(8) R.F. Harper, Assyrian and Babylonian Letters belonging to the Kouyunjik Collection of the British Museum: edited in L. Waterman, Royal Correspondence of the Assyrian Empire, Vol. I, p. 375, Letter 351.

to Ashur.<sup>1</sup> Esarhaddon gave some of his blue tribute, as his father had done before him, to the Temple of the New Year's Feast.<sup>2</sup> The Palace Which Guards Everything at Nineveh was given a cornice of basalt and lapis lazuli, and around the gates a moulding "like the vault of heaven".<sup>3</sup> He was proud of his restoration work in Esagila in Babylon and made many memorial tablets.<sup>4</sup> Two large lapis lazuli seals were found by Koldewey during his excavations in Babylon: one bore an inscription of Esarhaddon, the other of Marduk-zakir-shumi (see p. 128).

The Assyrian empire was finally overthrown some 14 years after the death of Esarhaddon's son and successor, Assurbanipal (668-626), in 612 B.C. by a joint attack by the Medes and Babylonians.

#### The Neo-Babylonian Empire

Babylonia, under the rule first of Nabopolassar and then of his son, Nebuchadrezzar (605-562) became, on the fall of Assyria, a major power, as also did the Medes in Iran and Anatolia. There are relatively few references to lapis lazuli during the period, and indeed the unification and expansion of the Medes deprived the Babylonians of control of the Eastern trade routes.

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(1) L. Waterman, ibid, Vol. II, p. 363, Letter 1240.

(2) L.A.R. II, para 761 B.

(3) Ibid, paras. 692 and 698.

(4) Ibid, paras. 656, 659E and 722.

Nebuchadrezzar adorned Marduk's boat, named Udara, with gold, marble and lapis lazuli.<sup>1</sup> He also described the famous Ishtar Gate as being made of "uqnû", which in this case should be read as blue enamelled bricks.<sup>2</sup> Other references to "uqnû" as blue tiles are to the top of Etemenanki and to part of the royal palace, which were covered with them.<sup>3</sup> The shortage of lapis lazuli in Babylonia at this time is well demonstrated by the fact that only the false and not the real stone was used in the lavish decorations of large reliefs in the Citadel of his capital, Babylon.<sup>4</sup>

After a revolutionary period, Nebuchadrezzar was succeeded by Nabunaid (555-539), whose reign was ended when Babylon was captured by Cyrus II (559-529), the Persian. There is a Persian verse account of the reign of Nabunaid, doubtless written for propaganda purposes, which in a fragmentary passage records how he gave lapis lazuli to the moon-god, Sin.<sup>5</sup>

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- (1) L. Legrain, Royal Inscriptions and Fragments from Nippur and Babylon, P.B.S. XV, p. 41.
  - (2) R. Koldewey, The Excavations at Babylon, p. 45.
  - (3) S. Langdon, Die Neubabylonischen Königinschriften, V.A.B. 4, p. 127, line 16 and p. 119, line 46.
  - (4) R. Koldewey, ibid., p. 158.
  - (5) S. Smith, Babylonian Historical Texts, p. 87. This passage is read differently in B. Landsberger and Th. Bauer, "Zu neuveröffentl. Geschichtsquellen der Zeit von Asarhaddon bis Nabunaid", Z.A. 37, p. 89, col. iii. Instead of abanzagin, Landsberger reads /Ziqna/ zaqin - wearing a beard.

### The Persian Period

A document dated to Cyrus' fifth year refers to a business transaction concerning bronze and 55 minas of lapis lazuli,<sup>1</sup> while a contract of his ninth year about house-plots in Barsippa mentions the lapis lazuli gate of that town.<sup>2</sup>

The most important text of the Persian period with regard to lapis lazuli is the Susa building inscription of Darius I. In this he describes the materials for his palace, where they came from and who worked them. Lapis lazuli came from his province of Suguda, or Sogdiana.<sup>3</sup> Ancient Sogdiana incorporates the Badakhshan area - and it is this text which gives the strongest corroboration that the ancient source of lapis lazuli was Badakhshan - a fact already suggested geologically.<sup>4</sup>

In brief, therefore, the historical texts provide the following information: non-contemporary texts in Early Dynastic II, III and the Akkadian periods (pp. 151-152) agree with the archaeological record that lapis lazuli was in plentiful supply at those times. We then have no

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- (1) G. Contenau, Contrats Néo-Babyloniens, T.C.L. XII, p. 83, 3.
  - (2) Vorderasiatische Schriftdenkmäler der Königlichen Museen zu Berlin, Heft V, 5 42:2: edited in M. San Nicolo and A. Ungnad, Neubabylonische Rechts- und Verwaltungsurkunden I, p. 29, no. 18: and see p. 142.
  - (3) R.G. Kent, Old Persian, p. 143, line 37 ff.
  - (4) See Chapter I, p. 19.

literary information from the end of the reign of Naram Sin (2291-2255) until we hear of Gudea (c. 2150) who engages in extensive trade in order to acquire many luxury materials for his temple (pp. 152-3).

Tombs of the Third Dynasty of Ur are equipped with beads carved from a wide range of stones, including fine quality lapis lazuli: and the strange hymn on the death of Ur-nammu (2113-2096) provides literary evidence of its use at that time, as also do two references in the reign of Shulgi and various business records (pp. 153-4).

Abi-sarè of Larsa (1905-1895) and Bur-Sin of Isin (1895-1874) both record the presence of the stone during their reigns (p. 154).

References to lapis lazuli occur quite frequently in the Old Babylonian period, c. 1850-1600 (p. 155), and again in the Middle Babylonian and the beginning of the Middle Assyrian period, c. 1450-1200 (pp. 156-161). Little is at present known of what occurred in Mesopotamia from c. 1100-900 B.C. and we do not again read of much lapis lazuli until the Neo-Assyrian period, when most of the kings used it (pp.162-4).

The Neo-Babylonians, who ruled after the collapse of Assyria, were only poorly supplied with the stone (pp. 164-165) but the succeeding Persians controlled the entire length of the trade route.

From the evidence of the texts, therefore, we are left with the following gaps in information, which may represent periods of discontinuity when this ancient trade broke down:

1. From the end of the reign of Naram-Sin to Gudea, some one hundred years when Mesopotamia was mainly under Guti domination.
2. A period of about 50 years from early in the reign of Bur-Sin of Isin (1895-1874) until approximately the time of Zimri-Lim. Large supplies are listed in the Mari inventories.
3. Between the Old and Middle Babylonian periods - c. 1600 - 1450 B.C.
4. During the 'Dark Age' from c. 1050-900 B.C.
5. A decline in supplies at a time when Babylon was threatened by the Medes, who were then blocking the Eastern trade route - 612-539 B.C.

While historical texts have amplified the bare archaeological record concerning the use or disuse of lapis lazuli, other texts, such as the mythical, legendary and ritual may tell us why it was used, why Mesopotamian merchants were prepared to organize this long and hazardous route, and what were the special virtues of the stone.

#### Association of the stone with deities and mythical people

While no text, either in ancient Mesopotamia or in later Greece, says in so many words that blue is valuable for this or that purpose, an idea of its significance is given by the frequent association of blue materials with deities and deified legendary beings.

One relevant text is the Sumerian myth of Inanna's Descent to the Nether World. In this, Inanna, Queen of Heaven and Sumerian prototype of Semitic Ishtar, is determined to visit the underworld, which is ruled by her sister. Before leaving she arrays herself carefully with the seven "divine ordinances" for her protection, but, nonetheless, on arrival in the nether world, she is stripped of them, one by one, and then slain. Enki, god of wisdom, later resuscitates and rescues her. Of the seven apotropaic "divine ordinances", two are made of ZÁZA.GIN: the third, "the measuring rod (and) line of lapis lazuli"<sup>1</sup> and the fourth "small lapis lazuli stones she tied about her neck".<sup>2</sup> Each of the seven ordinances had some specific prophylactic virtue.<sup>3</sup> In the Gilgamesh epic, for instance, Ishtar swears an oath to the gods on her lapis necklace:

"When at length as the great goddess arrived  
She lifted up the great jewels which Anu had  
fashioned to her liking:  
'Ye gods here, as surely as this is lapis upon  
my neck I shall not forget'."<sup>4</sup>

The meaning of the measuring rod and line is variously interpreted: Van Buren suggests it is "a wand of office denoting her status as a ruler",<sup>5</sup> while Frankfort writes

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(1) A.N.E.T., p. 53, col. II: for this translation see also M. Witzel, "Zur Sumerischen Rezension der Höllenfahrt Ishtars", Orientalia N.S. 14, p. 32, 19.

(2) A.N.E.T., p. 53, col. ii.

(3) E.D. van Buren, "Amulets in Ancient Mesopotamia", Orientalia N.S. 14, p. 21 f.

(4) A.N.E.T., p. 95, col. i.

(5) E.D. van Buren, ibid, p. 22.

"Its general use as an emblem of divinity follows from the common interpretation of measuring instruments of all descriptions as symbols of justice".<sup>1</sup> He suggests that the goddess shown in the Burney Relief is holding the "line", a coiled piece of rope dyed blue (it is hardly likely that the line would have been made of stone). The measuring rod and line are clearly shown together on Ur-nammu's stela<sup>2</sup> held in the hands of the moon-god, Nanna. This is of particular interest for in the hymn commemorating Ur-nammu's death, Ur-nammu gives to one of the deities of the nether world, on his arrival there, "a measuring line of lapis lazuli of one Ninda length".<sup>3</sup>

Arrayed in her divine and protective symbols, Inanna "arrived at the lapis lazuli palace of the nether world".<sup>4</sup> Why lapis lazuli should symbolize darkness in this context is uncertain, for when Enki, god of Eridu, builds himself a house in the abyss of silver and lapis lazuli it is described:

"Enki, the lord who decrees the fates,  
Built his house of silver and lapis lazuli;  
Its silver and lapis lazuli, like sparkling light,  
The father fashioned fittingly in the abyss."<sup>5</sup>

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- (1) H. Frankfort, "The Burney Relief", A.f.O. XII, pp. 129-132.
  - (2) A. Parrot, Sumer, p. 229, Pl. 282.
  - (3) G. Castellino, "Urnammu, Three Religious Texts", Z.A. 52, p. 23, Line 41.
  - (4) A.N.E.T., p. 54, col. i. This can also be translated as "at the palace, the lapis lazuli mountain", A. Falkenstein, "Zu Inanna's Gang zur Unterwelt", A.f.O. XIV, p. 131, line 72.
  - (5) S.N. Kramer, Sumerian Mythology, p. 62.

Also, when Gudea, king of Lagash, builds the temple of E-ninnu for Ningirsu, he several times refers to bright and heavenly blocks of lapis lazuli: he says:

"Sein E'anirbirbir, das ... ist ein lapislazuli Berg, der in Himmel und Erde den Boden berührt."<sup>1</sup>

Having built his house, Enki then travels to Nippur, the spiritual centre of Sumer, to have his "pure house" blessed. To Nippur, too, in another myth, travels Nanna of Ur to obtain Enlil's blessing. We are told that he arrives at Nippur at the lapis lazuli quay of Enlil.<sup>2</sup>

In the creation epics, Enlil, god of Nippur, introduced labour, symbolized by a "pickaxe of gold, whose head is of lapis lazuli", and decreed its extensive powers in agriculture, the building of cities and subduing rebellion.<sup>3</sup>

In another of the epics relating to a time before civilisation began, lapis lazuli is associated with the emblem of earthly royalty, the sceptre:

"The beclouded people, in all, had not set up a king. At that time, no tiara had been tied, nor crown, And no sceptre had been inlaid with lapis; ... Sceptre, crown, tiara and (shepherd's) crook Lay deposited before Anu in heaven." 4

### Gilgamesh and Enmerkar

Some of the Early Dynastic kings were deified in later ages and became the mythical heroes of a Golden Age. In

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- (1) A. Falkenstein und W. von Soden, Sumerische und Akkadische Hymnen und Gebete, p. 162, Cyl. A. XXV, 12 ff.
  - (2) S.H. Kramer, Sumerian Mythology, p. 48.
  - (3) Ibid, p. 52.
  - (4) A.N.E.T., Old Babylonian version, p. 114: Neo-Assyrian version, p. 115.

these tales of heroes, lapis lazuli is frequently mentioned. Details of Enmerkar's trade war with Aratta, which was waged to restart the lapis lazuli trade (see p. 58), are recorded in this way as are the exploits of mighty Gilgamesh.<sup>1</sup>

In the Gilgamesh epic Ishtar tries to bribe Gilgamesh to become her lover and offers him a chariot of lapis and gold.<sup>2</sup> In a fury after Gilgamesh has rejected her, she persuades her father Anu to make, as an instrument of revenge, the dread Bull of Heaven. Each of the horns of this fearsome monster are cast from thirty minas of lapis lazuli.<sup>3</sup> Despite his horns of lapis,<sup>4</sup> however, the bull is slain by Gilgamesh's friend, Enkidu. For this affront to Ishtar, Enkidu sickens and dies. Gilgamesh mourns deeply for the loss of his friend:

He filled with honey a bowl of carnelian and  
with curds a bowl of lapis lazuli.<sup>5</sup>

After this warning of human mortality Gilgamesh sets off on a quest for immortal life. On his way to visit Utnapish-tun (the Sumerian Noah) he passes through a garden of jewels where "the lapis bears foliage; It, too, bears fruit lush to behold".<sup>6</sup>

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- (1) S.N. Kramer, Enmerkar and the Lord of Aratta: "Gilgamesh and Agga", A.N.E.T., p. 44 ff.: "The Gilgamesh epic", A.N.E.T., p. 72 ff.
  - (2) A.N.E.T., p. 83, col. ii.
  - (3) Ibid, p. 85, col. ii.
  - (4) It is interesting that the Bull of Heaven has horns of lapis lazuli for Early Dynastic bulls are often given horns as well as beards of the blue stone, p. 32.
  - (5) A.N.E.T., p. 88, col. i.
  - (6) Ibid, p. 89, col. ii.

Mention of a lapis lazuli tree, or a tree looking like lapis lazuli, also occurs in the bilingual Legend of the kiškanu tree, which reads:

"In Eridu, having caused the dark kiškanu tree to grow in a clean place,

∕In Eridu the dark kiškanu tree grew up, in a clean place it was created.∕

having caused it, whose appearance is like lapis lazuli, to stretch forth upon the nether sea,

∕Its appearance was like blue lapis lazuli which stretches forth upon the nether sea.∕<sup>1</sup>

### Ritual and Medical

In antiquity it was thought that illness was caused by committing an impure act or an offence against a deity. The cure of the sick therefore involved their ritual purification: in these purification ceremonies the colour blue was of value and was employed in the form of stones,<sup>2</sup> of seals<sup>3</sup> and of wool dyed blue.<sup>4</sup> The most frequent use of blue was in rituals concerned with diseases of the head and neck,<sup>5</sup> although it also occurred occasionally in rituals associated with ailments of other parts of the body.<sup>6</sup> In

- (1) CT 16 46:185, edited by S. Langdon, "The Legend of the kiškanu", J.R.A.S. for 1928, p. 846, lines 183-6.
- (2) H.C. Rawlinson, The Cuneiform Inscriptions of Western Asia, Vol. IV, 18 No. 3 iv 8.
- (3) B.L. Goff, "The Role of Amulets in Mesopotamian Ritual Texts", Journal of the Warburg and Courtauld Institutes, Volume 19, p. 25.
- (4) Rawlinson, ibid., Vol. IV, 25, ii 20.
- (5) CT 23 34:29, 42:18; edited in S. Langdon, Historical and Religious Texts from the Temple Library of Nippur, B.E. 31, Pl. 50 passim: E. Ebeling, K.A.R. 202 ii 20: R. Campbell Thompson, "Assyrian Prescriptions for diseases of the head", A.J.S.L. XXIV, pp. 323-353.
- (6) H.H. Figulla, Business documents of the New Babylonian Period, U.E.T. IV, nos. 150-152.

one case it was used in conjunction with other stones "against (the disease called) the hand of a ghost (in case of) paralysis of hands and feet"<sup>1</sup> and in another to effect the removal of a ghost.<sup>2</sup> It was regarded as an aid in effecting child-birth.<sup>3</sup>

Blue was also effective in general purification rites such as the following:

"He is purified, cleansed, bathed, washed, cleaned, With the water of the pure Tigris and Euphrates, the water of the sea (and vast) ocean, Pure water, silver, gold, bronze, tin, lead, carnelian, lapis lazuli, ..."<sup>4</sup>

and many similar ones.<sup>5</sup> Other ritual texts mentioning lapis lazuli were addressed to ritual objects.<sup>6</sup>

Although lapis lazuli is included among the materials used ritually it appears never to have been a vital ingredient. Indeed, compared to other stones, it occurs only rarely. This is perhaps surprising when it is remembered that today blue is still sometimes referred to as the colour of healing and faith.

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- (1) A.L. Oppenheim's review of U.E.T. IV in J.C.S. IV, p.188.
  - (2) Ebeling, K.A.R. 182:8.
  - (3) B.L. Goff, Warburg Journal 19, p. 25.
  - (4) E. Reiner, Šurpu, A Collection of Sumerian and Akkadian Incantations, Tablet VIII, lines 83-85.
  - (5) Ebeling, K.A.R. 132 iii 15, edited by F. Thureau-Dangin, Rituels Accadiens, p. 106; CT 17 39:50, edited in R. Campbell Thompson, The Devils and Evil Spirits of Babylonia, Tablet AA, pp. 139-145: and R. Campbell Thompson, Assyrian Medical Texts from the Originals in the British Museum, 90, 1:5 *passim*.
  - (6) Rawlinson, *ibid*, 18, no. 3 iv 18: and F. Kocher, "Ein mittel assyrisches Ritualfragment zum Neujahrsfest", Z.A. 50, p. 198.

Geographical Associations

A number of texts link  $Z\acute{A}Z\grave{A}.G\grave{I}N/aban$  uqnû with various geographical localities: the best-known of these is Mount Bikni, usually identified as Mount Demavand near Tehran.<sup>1</sup> These associations are only of limited interest in strengthening or weakening the probability of a particular source, primarily because we do not know to which of the four types of  $Z\acute{A}Z\grave{A}.G\grave{I}N$  reference is being made, and secondly because a given locality probably indicates no more than that it was the most distant point known to dwellers in Mesopotamia from which supplies were collected.<sup>2</sup>

Mountains connected with  $Z\acute{A}Z\grave{A}.G\grave{I}N/aban$  uqnû in literary sources are Mounts Galashu, Takniyara, Dapara and Bikni. Galashu, strewn with blocks of lapis and gold, was one of the obstacles which Sargon of Agade had to overcome on his way to Purushkhanda.<sup>3</sup> It seems probable that while a mountain, by name Galashu, did form one of the obstacles in his path, the blocks of lapis and gold arose as part of the mythical exaggeration of his difficulties.

A Hittite ritual for the erection of a house mentions Mount Takniyara as a source of the lapis lazuli used apotropically in foundation deposits.<sup>4</sup> This mountain is

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(1) E. Ebeling und B. Meissner, Reallexikon der Assyriologie II, pp. 28-29.

(2) See note (1) on page 115.

(3) E.F. Weidner, "Der Zug Sargons von Akkad nach Kleinasien", Boghazköi Studien 6, p. 65, line 28: and see p. 87.

(4) A.N.E.T., p. 356, col. ii.

unfortunately not otherwise known and we are unable even to discover in which country it lies. Other sources listed in the text occur in such widely separated places as Cyprus and Elam.

The Lipšur Litanies, a series of incantations, list the sources of various materials in the form, "May Mount Aralu absolve, the home of gold".<sup>1</sup> Makkan and Meluhha are mentioned as the source of copper and carnelian,<sup>2</sup> an attribute supported elsewhere, as is Mount Aralu as a source of gold.<sup>3</sup> The "home of lapis lazuli", however, is Mount Dapara,<sup>4</sup> a place not otherwise known. On the grounds of a doubtful analogy of Dapara with Pliny's "Tapyres"<sup>5</sup> and thence with Tabaristan, a province South of the Caspian Sea, Campbell Thompson identifies it with Mount Bikni or Demavand,<sup>6</sup> a convenient but perhaps unconvincing argument. This analogy is, however, accepted by Harris, who carries it further, equating tfrrt, the Egyptian source for lapis lazuli, with Plotiny's "Tapures", Pliny's "Tapyres" and so to "Dapara" and Mount Bikni.<sup>7</sup>

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- (1) Erica Reiner, "Lipšur Litanies", J.N.E.S. 15, p. 133, line 21.
  - (2) Ibid, lines 33 and 34.
  - (3) C.J. Gadd and S.N. Kramer, Literary and Religious Texts, U.E.T. VI, Pl. II.
  - (4) E. Reiner, ibid, p. 133, line 26.
  - (5) Pliny, N.H. VI 16.
  - (6) R. Campbell Thompson, Dictionary of Assyrian Chemistry, p. 130.
  - (7) J.R. Harris, Lexicographical Studies in Ancient Egyptian Minerals, p. 126: and see above note (1) on page 115.

It is Esarhaddon who associates Mount Bikni<sup>1</sup> with lapis lazuli, for in the following passage he calls it "Šad uqni" or the mountain of lapis lazuli:

"Patusharra, a district on the border of the salt desert which lies in the land of the distant Medes, on the edge of Mount Bikni, the lapis lazuli mountain".<sup>2</sup>

Esarhaddon extracted a tribute of lapis lazuli from the Medes,<sup>3</sup> who must have acquired it themselves from further East. Bikni was, therefore, just one of the staging posts on the lapis route, perhaps the most distant one known to Assyria.

The land of Tukrish is mentioned as another entrepôt in the myth "Enki and Ninhursag":

"May the land Tukrish transport to you gold  
(from) Harali, lapis lazuli, (and) ...  
May the land Meluhha bring (?) to you  
tempting precious carnelian."<sup>4</sup>

Tukrish is fairly certainly located in Western Iran to the East of the Tigris and North of Elam.<sup>5</sup>

A passage in a hymn to Ninurta gives a very surprising land as a source. This hymn, which extols Ninurta as the bringer of metals, stones and minerals from their country

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- (1) Bi-ik-ni is not an Assyrian word, but is probably the local name.
  - (2) L.A.R. II, para. 540.
  - (3) Ibid, paras. 540 and 566.
  - (4) S.N. Kramer, The Sumerians, p. 279: cuneiform text in C.J. Gadd and S.N. Kramer, Literary and Religious Texts, First Part, U.E.T. VI, Plate II.
  - (5) J. Bottero, "Les Inventaires de Qatna", R.A. 43, p. 22.

of origin, reads: "Carnelian and lapis you brought (?) from the land Meluhha".<sup>1</sup> Carnelian is a well-known product of Meluhha, but this is the only instance when Meluhha is also claimed as the source of ZÁZA.GIN. This may be a pointer that a trade in lapis lazuli was organized from Badakhshan to Mesopotamia via Harappan India and Meluhha.<sup>2</sup> If this was in fact so, the route cannot have lasted long, for there is little evidence for the use of the stone in India.

### Association and Use of Blue in Buildings

The use of lapis lazuli is frequently recorded in texts connected with buildings, and the stone was often included in the ritual foundation deposits, buried to protect a palace or temple.<sup>3</sup>

A Hittite text records the elaborate ritual necessary to "rebuild a house that had been destroyed or (build) a new house in a different place".<sup>4</sup> Foundation deposits of a wide variety of materials, including gold, silver and lapis lazuli, were placed under the corner-stones, under the hearth, under the cult-stand and under the door.<sup>5</sup>

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(1) Cuneiform text in S.N. Kramer, Sumerian Literary Texts from Nippur in the Museum of the Ancient Orient at Istanbul, in Annual of the American Schools of Oriental Research XXIII, Hymn no. 61, p. 22 and Plates XXX to XXXI: commented on in S.N. Kramer, The Sumerians, p.279.

(2) See Chapter IV, p. 229.

(3) For instance, Shalmaneser III under the walls of Ashur, E. Michel, "Die Assur-Texte Salmanassars III", W.O. II, p. 45: Sargon, for the Palace without a Rival, L.A.R. II, paras 73, 110 and 112: Sennacherib, the Temple of the New Year's Feast, ibid, para 440.

(4) A.N.E.T. p. 356, col. i.

(5) Ibid, p. 356, cols. i and ii.

In addition to being buried, lapis lazuli was sometimes stuck on and into the walls of a temple or palace:<sup>1</sup> and memorial or dedicatory tablets were made of the stone.<sup>2</sup>

References to <sup>aban</sup>uqnû, which should be read as glazed blue bricks rather than as pieces of lapis lazuli refer to the top of Etemenanki and to the frieze of the royal palace of Babylon.<sup>3</sup> Large quantities of such blue glazed bricks, found loose on the ziggurat at Ur, suggest the earlier existence there of a temple so covered.<sup>4</sup>

Esarhaddon claims to have built a cornice of <sup>aban</sup>uqnû on the Palace Which Guards Everything at Nineveh;<sup>5</sup> probably this should also be read as glazed bricks rather than as lapis lazuli.

One of the gates at Barsippa is described as abul <sup>aban</sup>uqnû.<sup>6</sup>

- (1) Shanshi Adad I stuck the walls of the Temple of Enlil in Ashur, L.A.R. I, para 43A; and E. Ebeling, B. Meissner und E.F. Weidner, Die Inschriften der Altassyrischen Könige, A.O.B. I, pp. 22-3: Sennacherib adorned the walls of the Palace Without a Rival, L.A.R. II, para. 389.
- (2) Sennacherib, to dedicate a canal, L.A.R. II, para 335: and Esarhaddon, tablets for Esagila in Babylon, L.A.R. II, para. 656 and para 659.
- (3) S. Langdon, Die Neubabylonischen Königsinschriften, V.A.B. IV, p. 127, line 16 and p. 119, line 46.
- (4) U.E. V, p. 133.
- (5) L.A.R. II, paras. 692 and 698.
- (6) Vorderasiatische Schriftdenkmäler der Königlichen Museen zu Berlin, Heft V, 42:2: edited in M. San Nicolò und A. Ungnad, Neubabylonische Rechts- und Verwaltungsurkunden I, p. 29, no. 18.

It seems unlikely that a gate should have been constructed of, or even veneered with, either real or false lapis lazuli. Probably it was stoutly made of wood and painted blue, in order to avert the evil eye. The many texts mentioning this gate have enabled Ebeling and Meissner to decide its position in Barsippa. They locate it in the centre of the North-East city wall, where the two processional streets from Ezida met, facing towards Babylon, the side of the most traffic.<sup>1</sup>

### Hymns and Songs

A number of hymns mentions lapis lazuli; usually they merely state that a temple was beautified with lapis lazuli,<sup>2</sup> or refer to the god's chariot of ušū wood, embellished with lapis lazuli.<sup>3</sup> References to such hymns are listed below, together with a few other references, too fragmentary to be of value.<sup>4</sup>

- (1) E. Ebeling und B. Meissner, Reallexikon der Assyriologie, Band I, p. 409, para 17.
- (2) G. Reisner, Sumerisch-Babylonische Hymnen nach Thontafeln - Griechischer Zeit: edited S. Langdon, Babylonian Liturgies, p. 32, lines 24-26.
- (3) H.C. Rawlinson, The Cuneiform Inscriptions of W. Asia, Vol. IV, 12. 25.
- (4) L.W. King, Babylonian Magic and Sorcery, p. 60, 11 f.: E.G. Perry, Hymnen und Gebete an Sin, p. 23, no.5a, 6f.: S. Langdon, "A Ritual of Atonement addressed to Tammuz and Ishtar", R.A. XIII, p. 115: P. Jensen, Assyrisch-Babylonische Mythen und Epen, KB VI 1, p. 55, 2, 16 f.: S. Langdon, Sumerian and Babylonian Psalms, p. 231: R.M. Witzel, Tammuz-Liturgien und Verwandtes, pp. 138-9: H.de Genouillac, Textes Religieux Sumériens du Louvre I, TCL XV, p.4, no.16, Pl. XLVIII, line 39: E.I. Gordon, Sumerian Proverbs, p. 206: Myhrman, Babylonian Hymns and Prayers, PBS I/1, II Rev iv 75 and III 43 fol.: Kohler und Ungnad, Assyrische Rechtsurkunden, p. 72, no. 89.

In one of the Canaanite epic poems Keret begs King Pabil to give him his daughter, Huray, "whose eyeballs are gems of lapis lazuli".<sup>1</sup> Eyes in statuary are often inlaid with small pieces of lapis lazuli.

A famous song reads:<sup>2</sup>

"My beloved is all radiant and ruddy, distinguished among ten thousand.  
His head is the finest gold; his locks are wavy, black as a raven.  
His eyes are like doves beside springs of water bathed in milk, fitly set. ....  
His arms are rounded gold, set with jewels.  
His body is ivory work, encrusted with lapis lazuli.  
His legs are alabaster columns. ...."

#### Symbolical Significance of Lapis Lazuli

The texts discussed in this section provide evidence of the symbolic significance of lapis lazuli and like-named blue materials. Particularly relevant is the equation in <sup>the</sup> one of/lexical texts of ZÁ<sup>´</sup>ZA.GIN with ebbu, the adjective for "pure" or "bright" (p. 143). It is perhaps because of its purity as well as its apotropaic virtues that so many amulets and seals are carved from lapis lazuli, for the quality of purity was of prime importance.

The frequent association of the stone with divine beings in myth and legend has also been noted. Inanna and Ishtar wear necklaces of lapis beads (p. 169); another divine ordinance is a lapis measuring rod and line, mentioned

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(1) G.R. Driver, Canaanite Myths and Legends, p. 33, line 43.

(2) The Song of Solomon, Chapter V, verses 10-15.

both by Inanna and Ur-nammu (pp. 169-70).

The nether world is symbolized by a mountain of lapis lazuli, while Enki's house of silver and lapis is described as "like sparkling light". When Gudea builds his temple he describes it rising from the earth like a lapis lazuli mountain (p. 152). To the gods, therefore, lapis lazuli seems to symbolize both the vaults of heaven and the dreary nether-world; the sky and the earth; light and dark. They themselves wear it as jewellery to protect themselves against evil, as do their human followers.

To human beings, as opposed to the deities, lapis lazuli was likewise an important and valuable stone, with a high prestige value. They dedicated it to deities to please and pacify them: king gave it to king: they made protective amulets from it - there is even a specific text recording the virtues of a seal made from lapis lazuli:

"(If) a seal is made of lapis lazuli, he will be altogether lucky (literally 'he will have a god altogether'), that god will make him happy."<sup>1</sup>

Another text, a Prayer to Marduk, mentioning the properties of stones, describes them:

"Like alabaster let my light shine, let me never have affliction!  
Like lapis lazuli may my life be precious in the sight, let it establish mercy!

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(1) E. Ebeling, K.A.R. 185, rev. I 11, translated by Professor C.J. Gadd in a letter to Professor Mallowan of 17. xi, 64: for another translation see B.L. Goff, "The Role of Amulets in Mesopotamian Ritual Texts", Warburg Journal 19, p. 27 - "... a seal of lapis lazuli (portends) that he shall have power: his god shall rejoice over him".

Like gold, O my god and my goddess, may prosperity be with me!"<sup>1</sup>

As well as its prophylactic virtues, lapis lazuli also had a medical and ritual value, particularly against diseases of the head and neck (p. 173). Its medical and ritual importance should not, however, be over-estimated, for other stones were more frequently used.

The Kassite kings dedicated discs of lapis lazuli to their gods "pour la conservation de sa vie".<sup>2</sup> More significantly, perhaps, Kurigalzu, son of Burnaburiaš presented a lapis disc to Ninurta "to bring rain to ... his country. ..." <sup>3</sup>

For humans, therefore, lapis lazuli was associated with the following powers or virtues:

1. Connection with the divine;
2. Propitiatory to deities;
3. Purity;
4. Protection against evil;
5. Establishment of mercy;
6. Conservation of life;
7. A limited medical and ritual value; and
8. A bringer of rain.

With all these properties it was, therefore, sufficiently important to make the maintenance of a distant and difficult trade worth-while. The values listed above are still reflected in some of the virtues attributed to the colour blue today.

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(1) L.W. King, Babylonian Magic and Sorcery, p.62, ll.69-71.

(2) F. Thureau-Dangin, "Notes pour servir à la chronologie de la dynastie Kassite", J.A. XI, p. 124.

(3) L. Legrain, Royal Inscriptions and Fragments from Nippur and Babylon, P.B.S. XV, p. 30, no. 49.

CHAPTER FOUR

The Trade in Lapis Lazuli.

As has been established, the principal source for lapis lazuli in antiquity were the Badakhshan mines. We know that these mines were being exploited both in early Islamic times<sup>1</sup> and during the Achaemenian era,<sup>2</sup> and it may be assumed that they were in use much earlier.

Since remarkably little lapis has been recovered from countries sited geographically nearer the source, such as India, South Russia, Iran and Anatolia, the primary consumer, and therefore original importer of the stone, must have been ancient Mesopotamia, where large amounts of lapis lazuli have been found. Thus we have the two termini of our primary trade - Badakhshan and Mesopotamia - which are separated from each other by about fifteen hundred miles. Some discussion of the principal physical features between the two termini is relevant here, for the nature of the terrain must determine the course of the routes followed by merchants.

Much of Iran and Afghanistan is composed of desert and mountain (see Map B in folder). On the whole it is an inhospitable land, but there are rich oases and fertile valleys. The main mountain ranges are the Hindu Kush, the

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(1) Referred to by Muqaddasi (985 A.D.), *Le Strange, The Lands of the Eastern Caliphate*, p. 436: and by Qazvini, *Mustawfi of Qazvin*, p. 197.

(2) R.G. Kent, *Old Persian*, pp. 142-144. Darius Susa F, lines 37-39. Darius names the area, Sughd or Sogdiana, from which he obtains his lapis and in which ancient province the mines are located.

Elburz and the Zagros. The Hindu Kush, with peaks up to 25,000 feet, is a continuation of the high Pamirs and forms the central backbone of Afghanistan, traversing the length of the country and at times occupying the greater part of its width. At its Western extremity it divides, a minor branch turning due South and bordering the Dasht-i-Lut, while the major part follows the Northern border of Iran, to form the Elburz range with its high point of Mount Demavand near Tehran, reaching some 19,000 feet. At its Western end the Elburz is joined by the Zagros, and these together sweep into Anatolia to form the Anatolian highlands. The Zagros occupies a broad band of country moving from the North West of Iran in a South Easterly direction in a continuous, though much broken, range.

Within the triangle formed by the Zagros, Elburz and Southern extension of the Hindu Kush lies the Great Salt Desert or Dasht-i-Lut. This desert region extends into the Zabol area and then into South West Afghanistan where it forms the Dasht-i-Margo.

Much of the Northern fringe of Afghanistan is also desert. In pre-Mongol times the Arab geographers describe quite a number of towns flourishing in rich oases along this strip and some of these still exist today. Most, however, were utterly sacked by the city-hating Mongol hordes, who destroyed not only the intricate irrigation

systems, but also massacred most of the population, so that few were left to rebuild after they had gone. To the Mongol fell proud Balkh, "Mother of Cities", once famed far and wide. Balkh is today only just recovering. A small town is now located among the acres of ruins and much of the once-cultivated plain is still desert.

East of Qunduz, itself sited East of Balkh, lies a tangled maze of mountains which separates the valley settlements and makes communications difficult. In this North East sector the mountains are bare: torrents of water from the heavy snows have cut deep river beds, thus reducing the size of the valleys. The inaccessibility of this region, Afghan Badakhshan, with its narrow isolated valleys and harsh climate, has kept the people at a low level of culture.

Due South of Badakhshan, on the other side of the watershed, lies the province of Nuristan, formerly Kafiristan. This is still the most inaccessible area of Afghanistan, so impenetrable that it was not Islamicized until the last century. The steep mountains are thickly forested and travel can only be undertaken on foot.

West of Nuristan, the capital of Afghanistan, Kabul, lies in a rich and fertile plain at the natural crossing point of roads from East and West, from North and South. The present capital of Iran, Tehran, is similarly sited and near the modern city lie the remains of many ancient ones - Rayy or Rhages and Varamin. On the Chahluz side

of the Elburz from Tehran the mountains are afforested and at times almost jungle-like. North of the jungle lies the salt inland sea, the Caspian, and further to the East, rolling steppe country.

The Southern coast of Iran, the Makran, which borders the Persian Gulf, is harsh and inhospitable. The coast is shallow and the ports are few and liable to heavy silting. Small boats with minimal draughts still creep along the coastline, as they did in antiquity. Natural forces of heavy inland silting, wave-deposited sand and a gradual rising of the ancient coast-line have caused considerable physical changes.<sup>1</sup> Ancient towns, the ruins of which now lie several miles inland, were once important harbours.

#### Possible Routes from Badakhshan to Mesopotamia

The most effective barrier to trade is desert, as the obvious essential for a slow-moving caravan is frequent and good water-holes. Sufficient water supplies were of even greater importance before the advent and use of the domesticated camel, the earliest evidence for the use of which does not occur much before 1,000 B.C.<sup>2</sup> The lapis trade had by then been in existence for some fifteen hundred years, within which were periods of great popularity and demand.

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(1) G.F. Dales, "Harappan Outposts on the Makran Coast", Antiquity 36, pp. 91-92.

(2) See p. 202 below.

Any route from Badakhshan to Mesopotamia had therefore to skirt round the great Persian desert, the Dasht-i-Lut, with its Afghan extension, the Dasht-i-Margo. High mountains are also a hindrance to easy communications for excessive altitude reduces the efficiency of man and beast. An efficient road must eliminate as many of these natural difficulties as possible.

From the lapis mines there are, therefore, two possible routes, a Northern and a Southern (see map on Plate 52). Briefly, the Northern route first goes North to Faizabad and thence West to Balkh, Meshed and Tehran before turning South West to Hamadan, Kermanshah and so into Iraq, thus leaving the Hindu Kush and the Dasht-i-Lut safely to the South, and the Elburz to the North. The Southern route leaves the mines in a Southerly direction, crosses the Anjuman Pass (14,000 feet) to Kabul and then travels to Peshawar via the Khyber pass. From Peshawar it follows the Indus valley down to the sea. From there maritime trade carries the merchandise up the coast, though an overland rather than a maritime route is also possible but geographically arduous. It would have to go up to Iranshahr and Bampur and then along the Zagros in a North Westerly direction to the coastal strip around Ahwaz and so into Mesopotamia.

### The Northern Route

The Northern route has long served as the main road connecting East and West. Scattered along it can be found ample evidence of its protracted employment. Both Sasanian and Muslim merchants travelled it and the latter have left a most detailed description of its every stage. It was the principal route of communication between the far-flung outposts of their Eastern empire and the Achaemenian administrative capitals of Ecbatana, Susa and Persepolis. The Achaemenians realized the vital importance of good communications with distant satrapies, and to ensure this they considerably improved the existing tracks. The Achaemenian roads were maintained by the Sasanians and it is probable that the route described so carefully by the early Arab geographers followed a course closely similar to that of the Sasanian, the Achaemenian and the pre-Achaemenian era.

Since the greater part of this long and much-used East-West road still awaits archaeological survey, it has been thought relevant to include here an outline of the Muslim record of the road, which they knew as the "Great Khurasan Road". Although the majority of the cities described by the Arab geographers were founded much later than the periods discussed in this thesis, the information they give does provide some idea of the earlier course of the road. A journey along the same route could, in fact,

lead to the discovery of early sites, hitherto unknown, which may lie underneath the Islamic cities, or be located near them.

### "The Great Khurasan Road"

The "Great Khurasan Road" - the Northern Route - was the most famous of the Abbasid roads, uniting the capital, Baghdad with the frontier towns of the Jaxartes on the borders of China (see map on Plate 53). Along it were transported the highly valued Chinese silks and celadon wares, as well as much other merchandise.

Starting from the East Gate of Baghdad, a city founded by the second Abbasid caliph, the Khurasan road traversed the Mesopotamian plain, crossing the numerous streams and canals on well-built bridges and passing through Khaniqin and Qasr-i-Shirin at the foot of the Hulwan pass. Yaqut in the thirteenth century described the bridge of Khaniqin as having twenty-four arches.<sup>1</sup> Qasr-i-Shirin, lying half-way between Khaniqin and Hulwan, was a large walled village with the ruins of a Sasanian palace.

From Hulwan (Sar-i-Pul),<sup>2</sup> famous for its sulphur spring, the road went through a series of valleys via Kirind to Kermanshah.<sup>3</sup> Kirind lay in a fertile plain at the head of the Hulwan pass.

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(1) Le Strange, The Lands of the Eastern Caliphate, p. 63.

(2) Where different, the modern name follows the old one in brackets.

(3) Le Strange, ibid, pp. 191-192.

Kermanshah, earlier Qirmisin, lies in the fertile Mahi-dasht plain. Twenty miles to the South East was the castle of Harsin, near which many tombs containing Luristan bronzes have been found. A day's march to the East of Kermanshah is the great cliff of Bisitun or Behistun, bearing sculptures both of the Achaemenians and Sasanians.<sup>1</sup>

The road from Kermanshah went to Hamadan via Kangavar. Kangavar was described by Ibn Rusteh and others as having a Sasanian palace.<sup>2</sup> (For detailed map of the road from the Hulwan pass to Damghan, see Plate 54).

Hamadan, ancient Ecbatana, capital of Media, was, as it still is, a large and fine city, sited in a fertile district. The town had three rows of markets, in one of which, says Muqaddasi, stood a fine old mosque. The goldsmiths' market was famous, still being mentioned by Qazvini (1340 A.D.).<sup>3</sup> That Hamadan was still famous for its goldsmiths in the fourteenth century A.D. is of interest, for Darius I records using the Medes to fashion the gold for his palace of Susa.<sup>4</sup>

Halfway between Hamadan and Rayy on the Khurasan road lay the city of Savah. It was important as early as the tenth century and was noted for its camels and camel-drivers. This large fortified town was sacked by the

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(1) Le Strange, ibid, p. 187.

(2) Ibid, pp. 188-189.

(3) Ibid, pp. 194-195.

(4) R.G. Kent, Old Persian, p. 144.

Mongols, who burnt its great library, which was housed in the Great Mosque.<sup>1</sup>

Rayy, ancient Rhages, was in the tenth century, one of the finest cities in the East. The town, covering a league and a half, was strongly fortified with five gates. High above the Great Mosque on a steep hill stood a castle built by the Caliph Mahdi, who rebuilt much of the town. During the Abbasid period Rayy was the chief mint city of the province. The town was taken, plundered and burnt by the Mongols in 1220. The surviving population mostly moved to Varanin, which had a pleasanter climate.<sup>2</sup>

Leaving Rayy, the road travelled East to Samnan via Khuvar, Qaryat-al-Milh (Dih-i-Namak) and Ras-al-Kalb (Lasgird).<sup>3</sup> Muqaddasi noticed a fine Friday Mosque in samnan, which was also famous for pistachios and other fruits.<sup>4</sup>

A long day's march beyond Samnan lay Danghan, the principal town of the province of Kunis. It was well-fortified, but sited in an infertile region with a poor water supply. The inhabitants manufactured good cloth, which was exported.<sup>5</sup> The ruins of Tepe Hissar lie just outside the modern town. The Elburz mountains, which lie to the North, can easily be crossed from this area, which explains the continued existence of settlements in an infertile region.

- (1) Le Strange, ibid, p. 211.
- (2) Ibid, pp. 214-216.
- (3) Ibid, pp. 366-367.
- (4) Ibid, p. 366.
- (5) Ibid, p. 365.

From Damghan it was another day's march to Al-Haddadah (Mihman-Dust),<sup>1</sup> after which the road to Nishapur divided, one road, the more direct postal road, lying along the edge of the desert and going through Sabzivar, while the other, a longer caravan route, went to the North and curved through the great upland plain of Juvayn, which was separated from the desert by a range of hills and was fertile in foodstuffs.<sup>2</sup>

This longer caravan track travelled through Bistan, a town sited in one of the most fertile regions of the province of Khusis. It had a magnificent Friday Mosque, and was defended by a great castle built by Shapur II.<sup>3</sup>

The chief towns of the Juvayn plain were Jajarm, a well-fortified city with 70 villages as dependants, and Azadhvar, with nearly 200 villages. Azadhvar was a populous town with fine mosques. Outside its gate was a great khan for merchants, by whom it was much frequented.<sup>4</sup>

Nishapur was the capital city of one of the four quarters of the Khurasan<sup>5</sup> province, the others being Herat, Marv and Balkh. Nishapur was founded by Shapur I, possibly on an earlier city, for prehistoric sherds have been found there. It was rebuilt in the fourth century A.D. by Shapur II. It was a populous and healthy market town

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(1) Ibid, p. 368.

(2) Ibid, p. 391.

(3) Ibid, pp. 365-366.

(4) Ibid, p. 392.

(5) 'Khurasan' means literally "The Eastern Land"

with a daily caravan traffic. The town, with a fortress, was shaken by an earthquake in 1145, sacked by the Ghuzz hordes in 1153 and by the Mongols in 1221.<sup>1</sup> It had recovered by the fourteenth century. Modern Nishapur is sited some distance away from the old ruins.

The Great Khurasan Road divided after leaving Nishapur at Qasr-ar-Rih (Dih-i-Bad), the Castle of the Wind: one road travelled due East to Marv, while the other followed a Southerly route to Herat.<sup>2</sup> (See map on Plate 55).

### The Herat Road

The journey from Qasr-ar-Rih to Herat took some nine days. Important stages on the route were Buzjan or Jam (Torbat-i-Shaikh Jam), four days from Qasr-ar-Rih; and Bushanj or Fushanj (Ghurian), another four days from Jam.<sup>3</sup>

Jam, a city of some size, was sited in a fruitful and well-watered district with many mulberry trees. Silk was one of its principal products. The town was also celebrated for its many shrines. It escaped Mongol devastation. Timur visited the shrine of Shihab-ad-Din Ahmad-al-Jan. The town is still flourishing.<sup>4</sup>

Fushanj was also a large town, half the size of Herat and like Herat also sited on the Hari Rud. It lay in a fertile plain and was fortified by a high wall and a deep water ditch. Despite these it was destroyed by Timur.<sup>5</sup>

(1) Ibid, pp. 383-386.

(2) Ibid, p. 388.

(3) Ibid, p. 431.

(4) Ibid, pp. 356-357.

(5) Ibid, p. 411.

Yaqut considered Herat to be the richest and largest city he had ever seen.<sup>1</sup> In the twelfth century during Ghurid rule, it reached its greatest splendour and was said to have had, no doubt with some exaggeration, a population of 444,000 with 12,000 shops, 6,000 hot baths and 659 colleges. The plain in which it lies was intensely irrigated by means of canals running from the Hari Rud. It was strongly fortified but, nonetheless, was taken by Timur.<sup>1</sup>

From Herat the Khurasan road went North to Marv-ar-Rud (Bala Murghab), passing through Babnah and Baghshur. Babnah and Baghshur lay in the district of Badghis, once fertile and well-watered, but now an uninhabited waste. Numerous ruins attest to its former popularity but the site of these mediaeval towns cannot be located.<sup>2</sup>

#### The Marv Road

From Qasr-ar-Rih the road to Marv went to Tus, which in the tenth century was the second city of the Nishapur quarter of Khurasan. It was ruined by the Mongols.<sup>3</sup> Thereafter Mashhad, famous for its Shrine of the Iman, took its position.

The town of Sarakhs lies on the direct road from Tus to Great Marv, on the Eastern bank of the Mashhad river (now Tajand or Tedzhen). In the tenth century Sarakhs was

(1) Ibid, pp. 408-409.

(2) Ibid, pp. 412-413.

(3) Ibid, pp. 388-389.

half the size of Marv and had a fine Friday Mosque and many markets. Blessed with a healthy climate, it was populous. Melons and grapes grew abundantly and the fine pastures fed many camels and sheep.<sup>1</sup>

At Sarakhs the road divided again, one road going directly to Great Marv, while the other crossed the desert in a long stage to Marv-ar-Rud. The former road at Marv again split, the main branch of the Khurasan road continued in a North Easterly direction through Bukhara and Samargand to the borders of China, while the other followed the Marv or Murghab river down to Marv-ar-Rud, a journey of some 160 miles.<sup>2</sup> The Bukhara road crossed the Oxus at the town of Amul, a journey of six days from Marv. Ibn Hauqal is the only geographer to record the route from Amul along the River Oxus via Zamm, 4 days, and Tirmid near Balkh, 5 days, to Badakhshan, a further thirteen days.<sup>3</sup>

Marv-ar-Rud was the principal town of its populous district, lying a bow-shot from the river in the midst of gardens and vineyards. It had a fine Friday mosque, which stood on wooden columns. Marv-ar-Rud was attacked by the Mongols but escaped total ruin and was still flourishing in the fourteenth century.<sup>4</sup>

From Marv-ar-Rud the road went East to Balkh (Wazirabad),

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(1) Ibid, p. 396.

(2) Ibid, pp. 403-404.

(3) Ibn Hauqal, Vol. II, p. 439.

(4) Le Strange, ibid, p. 405.

capital of the fourth quarter of Khurasan. Balkh lay in a fertile plain watered by the Dahas stream. Foodstuffs were plentiful and the cost of living was low. It was fortified by three concentric walls pierced by seven gates. Muqaddasi describes the beauty, splendour and riches of Balkh, its Great Mosque and its many palaces. One of the chief Sasanian fire temples had been built at Balkh, but it was sacked by the Muslims. Balkh was a favoured meeting place of merchants for from it roads led East and West, North and South. Balkh was devastated first by the Ghuzz Turks in 1155 and again by the Mongols in 1220. It is only now recovering.<sup>1</sup>

Between Marv-ar-Rud and Balkh there were two alternative roads, which separated at Taligan, an important town in the ninth century, famous for its felts. Taligan, three marches from Marv-ar-Rud, was as large and healthier as it lay in the mountains. It was stormed by Changiz Khan in 1220 and utterly destroyed.<sup>2</sup>

From Taligan one route went to Balkh via Faryab and Shuburken, while the other travelled through Maymaneh and Anbar. Maymaneh, still flourishing today, lay two marches from Taligan. In earlier times it was known as Al-Yahudan. Anbar, one day's march from Maymaneh was larger than Marv-ar-Rud. No town of this name is now known but it is probably

(1) Ibid, pp. 420-422.

(2) Ibid, p. 423.

located near Sar-i-Pul on the Shubarghan river. It was famous for its vineyards and the vinous habits of its inhabitants.<sup>1</sup>

Faryab, the site of which is no longer known, although it may be near Khaynabad, was a small town but very fertile and with fine gardens. It was healthy and much favoured by merchants. It was completely ruined by the Mongols in 1220. Shuburkan still exists today. Its gardens and fields were extremely fertile and it was populous, with much merchandise in its markets.<sup>2</sup>

Leaving Balkh the road travelled due East to Badakhshan and thence to Tibet.<sup>3</sup> Two days from Balkh lay the small town of Khuln (Tashkurgan) and two days further East was Warweliz (near Qunduz). Two more days brought the caravan to Tayikan (modern Taliqan and not to be confused with the Taliqan between Marv-ar-Rud and Maymaneh) and in seven more stages Badakhshan was reached.<sup>4</sup>

#### Ancient Sites along the "Great Khurasan Road"

Some of the ancient sites along this famous trade route are known, although the majority still await discovery.

The French excavators of Islamic Balkh found a few sherds comparable to those found at Old Marv, Afrasyab in

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(1) Ibid, pp. 424-426.

(2) Ibid, p. 425.

(3) The upper part of the Indus, populated by Tibetans, whence musk was imported.

(4) Le Strange, ibid, p. 428.

the Samarqand oasis and at Kobodian in the Kafirnegan valley, which are dated to the Iron Age, eighth to seventh centuries B.C.<sup>1</sup> Further exploration will probably reveal comparable and earlier settlements at many points along Northern Afghanistan.

In the Marv to Ashkabad area a team of Russian archaeologists have been excavating a series of sites covering a wide range of time, the type site of which is Namazga Tepe.<sup>2</sup>

While a prehistoric level was found at Nishapur, an Islamic city founded in Sasanian times, this has not yet been published. Further to the West, however, lies Tepe Hissar, near Damghan, a site with a considerable depth of early occupation and long recognized as an important entrepôt. In the Tehran-Rayy area a number of early sites have been recorded: Cheshme Ali, Khorvin-Chandar and Savah. The site of Tepe Sialk lies near Kashan, not far off the road.

In the Hamadan area are Tepes Badhora, Giyan and Djanshidi - and near Kermanshah, the important sculptures at Bisitun. The sculptures of Anubanini, king of the Lullubi, are carved on a cliff-face near the Sar-i-Pul or Hulwan pass.

#### Duration of the Journey from Badakhshan to Mesopotamia

As well as their detailed descriptions of the stages

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- (1) F.R. Allchin, "The Culture Sequence of Bactria", Antiquity XXXI, p. 134.
  - (2) V.M. Hasson, "The First Farmers in Turkmenia", Antiquity XXXV, pp. 203-213.

along the Great Khurasan Road, the geographers also compiled lists of the various routes, giving distances and stages. These do not, however, always agree. In addition to the geographer's itineraries, there are some instances of a journey undertaken and recorded by a traveller. One such rode from Qufa near Baghdad to Khurasan, his journey lasting some 20 days.<sup>1</sup> Ibn Rusteh,<sup>2</sup> however, records the journey from Baghdad to Nishapur, capital city of the Nishapur quarter of Khurasan, as lasting 44 days, while Ibn Khurdadhbeh<sup>3</sup> took 53. This perhaps indicates the considerable differences in the speed of a man riding post and a caravan of baggage camels.

From Nishapur there are four different routes to Balkh or to nearby Tirmid on the Oxus, from both of which it takes 13 days to reach Badakhshan. These four routes are not attested to by all the geographers. (See Pl. 53)

Route I from Nishapur to Balkh via Sarakhs, Marv and Marv-ar-Rud is described by Ibn Khurdadhbeh<sup>4</sup> as taking 37 days; by Yaqut,<sup>5</sup> 33 days and by Ibn Hauqal,<sup>6</sup> 29 days.

Route II from Nishapur to Balkh via Sarakhs and the long desert crossing to Marv-ar-Rud is attested to only by

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- (1) Tabari II, 1035.
  - (2) Ibn Rusteh, pp. 189-199.
  - (3) Ibn Khurdadhbeh, pp. 154-155.
  - (4) Ibid, pp. 155-156.
  - (5) Yakubi, pp. 85-86 and 107.
  - (6) Ibn Hauqal, pp. 438-439.

Yaqut<sup>1</sup> - 23 days, that is ten days shorter than the journey via Marv.

Route III, from Nishapur to Balkh via Herat and Marv-ar-Rud, given by Ibn Hauqal, totals 27 days.<sup>2</sup>

Route IV from Nishapur to Tirmid near Balkh via Sarakhs, Marv, Amul and Zamm is also listed only by Ibn Hauqal, who describes the journey as lasting 27 days.<sup>3</sup>

Of these four routes only the first is mentioned by more than one geographer, which might suggest that this was the most frequently used, although taking the longest time (37, 33 or 29 days). The quickest route, employing the desert crossing from Sarakhs to Marv-ar-Rud, attested by Yaqut, was perhaps unsuitable for merchant caravans. The other two, routes III and IV, listed by Ibn Hauqal, both lasted for 27 days.

Taking an average of 13 days from Badakhshan to Balkh or Tirmid, 30 from there to Nishapur and 50 from Nishapur to Baghdad, the journey of a merchant caravan would have lasted about three months, excluding days of rest for man and beast.

The animal principally used at this time was the camel, but even so the pace was probably no faster than a slow walk, as they were usually accompanied by their owners on

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(1) Yakubi, p. 99, records the journey from Sarakhs to Taliqan lasting 4 days. Taliqan lies 3 days from Marv-ar-Rud, which leaves only one day for the journey from Sarakhs to Marv-ar-Rud.

(2) Ibn Hauqal, pp. 438-439.

(3) Ibid, p. 439.

foot. The earliest evidence for the use of the camel for carrying merchandise occurs in the Neo-Assyrian period, when they are frequently depicted on panels of relief sculpture, for instance the Black Obelisk of Shalmaneser III and the Bronze Gates of Balawat.

Prior to the camel the animal used was probably the donkey, for as early as Early Dynastic II we have a reference to the "crate-carrying donkeys".<sup>1</sup> Since the pace of a camel caravan was a slow walk, we may assume that a donkey caravan travelled at about the same speed.

#### Badakhshan

As well as writing about the stages and itineraries of the Great Khurasan Road, the geographers also described the Easternmost province of Islam, Badakhshan. Both they and the Italian traveller, Marco Polo,<sup>2</sup> record Badakhshan as having magnificent pastures, broad and highly cultivated valleys and an excellent climate.<sup>3</sup> The Hudud al'Alan describes it as:

"A very pleasant country and a resort of merchants. It has mines of silver, gold, garnets and lapis lazuli. Musk is imported there from Tibet."<sup>4</sup>

An Indian myth tells of the fabled riches of the land of

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(1) See Chapter II, p. 58.

(2) See Chapter I, p. 6.

(3) W. Barthold, Turkestan down to the Mongol Invasion, p. 66.

(4) V. Minorsky, Hudud al'Alan, "The Regions of the World", A Persian Geography, 372 A.H., 982 A.D., p. 112, para. 24:24.

Badakhshan, which had a mountain of lapis lazuli, a mountain of gold and a mountain of rubies.<sup>1</sup>

All this contrasts sharply with the modern Afghan province, which is far from being a "green and pleasant land".<sup>2</sup> This enigma can perhaps best be explained by the fact that the Badakhshan of those times was much larger, incorporating the lands of Shughnan and Roshan in the East and Kulab in the West, lands acquired by Russia in 1895.<sup>3</sup>

The principal river of Afghan Badakhshan, the Kokcha (Arabic Dirgham), is a tributary of the Anu Darya or Oxus river. The capital of the province today is Faizabad, founded by Yar Beg, an Uzbek chieftain in the seventeenth century. The old capital, Badakhshan, was probably sited in much the same area.

Badakhshan was first mentioned in Chinese annals of the sixth and eighth centuries A.D.,<sup>4</sup> where it was described as part of Tu-ho-lo or Tukharistan, a name also used by the Arabs to describe the lands between Balkh and Badakhshan. This name came from the Tokhars who defeated the Greco-Bactrian kingdom in the second century B.C.

Badakhshan was Islamicized c. 736 A.D. The town of Jirm or Jurm was the frontier town of Islam on the trade route via Wakhan to Tibet.<sup>5</sup> Badakhshan escaped devastation

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(1) The Balas or Badakhshan ruby, so famous in Persian literature, is actually a garnet.

(2) Chapter I, p. 6.

(3) The Encyclopaedia of Islam, p. 554.

(4) Ibid, p. 552.

(5) Ibid, p. 553.

by the Mongols and remained until the fifteenth century under the rule of its native princes, who claimed descent from Alexander the Great.

We must now return to our discussion of possible routes from Badakhshan to Mesopotamia. Of the two hypothetical routes proposed on page 188 above, we have already discussed the Northern route in some detail. The Southern route has yet to be described:

The Southern Route from Badakhshan to Mesopotamia, following the Indus River

From the mines it is about a five day journey on foot or horse to Kabul. The first part of the journey goes due North, following the Kokcha river and passing through the deserted village of Lajvar Shui, which means lapis washing, and the important junction of Iskazr, where the Kokcha splits into two rivers, the Munjan and the Anjuman (see map on Plate 49). The Munjan flows past Sharan-o-Munjan, a pleasant village on the site of a once important Islamic town, which had been strongly fortified with an outlying wall system, as well as a fortress placed on the top of a natural rock outcrop. At Iskazr three tracks meet: from Jurn and Sar-i-Sang along the Kokcha, from Zebak and Sharan-o-Munjan along the Munjan and finally from Kabul along the Anjuman. The Anjuman river follows a South Westerly direction towards the village of Anjuman, ending in Lake Anjuman, which itself lies not far below the

Anjuman pass, some 14,000 feet in height. Once over this, the traveller enters the Panjshir valley. This fertile valley is well populated, the inhabitants living in small fortresses. From Panjshir the road goes to Kabul.

Few early sites have so far been located in South Afghanistan. That of Mundigak near Qandahar, however, attests the use of lapis lazuli. From Kabul, therefore, the stone might have been carried in one of two directions: South West to Qandahar and then along the Helmand, if there was any demand in the Seistan sites, or East via the Khyber Pass to Peshawar and thence to the Indus Valley sites.

In Harappan times an extensive sea-trade was carried on between India and Mesopotamia. Two of their outposts on the Makran coast have been located, Sutkagen Dor near Gadd and Sotka-Koh near Pasni, each of which guards the entrances to the only two practical routes from the coast to the interior.<sup>1</sup> From these ports small boats with a shallow draught<sup>2</sup> were able to creep along the Persian coast and so to reach the mouth of the Euphrates up which they sailed. The majority of the Indus Valley-Mesopotamian trade was probably carried in this way, for the overland route via Bampur and then North West to Susa is geographically

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(1) G.F. Dales, "Harappan Outposts on the Makran Coast", Antiquity XXXVI, p. 91.

(2) R.D. Barnett, "Early Shipping in the Near East", Antiquity XXXIII, p. 221.

arduous, entailing the crossing of many mountains, whose valleys run towards the coast. The area is, in addition, extremely dry.

It was therefore possible for lapis lazuli to reach Mesopotamia via India but as we shall see below, there appears to be no evidence that Harappan India ever imported lapis lazuli direct from Afghanistan. Indeed, it seems as if they brought the small amounts that they required from Mesopotamia.

The Afghan site of Mundigak near Qandahar was, however, well equipped with the stone and it seems probable that they imported it directly from the mines via Kabul.

Having established probable routes, we must now examine the "pattern" of the lapis lazuli trade in conjunction with the evidence of any relevant archaeological sites located along or near the roads. We need to discover whether the importation of massive quantities of lapis lazuli during, for instance, Early Dynastic III and Agade, and again, although to a lesser extent, in the Third Dynasty of Ur period, is reflected in the prosperity of Persian sites likely to act as entrepôts. We also need to establish whether the evidence points to the principal use of the proposed Northern route, or whether there are any indications that other tracks may have been followed at times.

## The Ubaid, Uruk and Jemdat Nasr Periods

The earliest recorded object of lapis lazuli in Mesopotamia occurs in Gawra XIII, a level assigned to the final stages of Northern Ubaid and which may be contemporary with the developments of Early Uruk in the South.<sup>1</sup> Trade in the stone with Iran had therefore already been established at that date.

The new Uruk inhabitants of Gawra, who had ousted their Ubaid predecessors, continued to import lapis lazuli, although supplies were dwindling by the end of the period. At this time, however, the first piece of the stone is found in the South, at Warka,<sup>2</sup> and it therefore appears as if Gawra's trade monopoly had been seized by the South, who took advantage of it to obtain large quantities of lapis lazuli in Jemdat Nasr times.

Access to Gawra in ancient Assyria was easiest from the area South of Lake Urmia, via one of three passes: the Kel-i-Shin, the Rowanduz and the Little Zab gorges. The Iranian plateau could be penetrated from the Urmia region in either an Easterly or a South Easterly direction.<sup>3</sup>

There are a number of strong links between Gawra and some of the plateau sites during the final stages of Northern Ubaid, which are shown not only by pottery comparisons but

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(1) See Chapter II, pp. 37-40.

(2) See Chapter II, pp. 48-49.

(3) R.H. Dyson, "Problems in the Relative Chronology of Iran, 6,000-2,000 B.C.", in Chronologies in Old World Archaeology, p. 215.

also by the general level of technical achievement - similar stamp seals and the full use of copper. The principal sites in Iran dominated by a painted buff ware tradition are Giyan, Susa, Bakun, Sialk and Hissar. Dr. Robert Dyson of the University of Pennsylvania has recently published a reappraisal of the vexed problem of early Iranian chronology,<sup>1</sup> incorporating much as yet unpublished material and his conclusions are generally followed here.

The precise dating of Susa A has long been debated, some authorities suggesting an earlier and others a later date. In 1954 Dyson made a sounding (as yet unpublished) on the Eastern edge of de Morgan's Grande Tranchée. In this he showed that pure Susa A wares lay beneath a mixed level of painted wares and of a simple form of thin-walled bevelled rim bowl: this phase was followed by strata containing the ordinary bevelled rim bowls and other typical Early Uruk wares and he therefore assigned Susa A to the final stages of the Ubaid period.<sup>2</sup> This same sequence was also observed in another unpublished sounding at Tall-i-Ghazir.<sup>2</sup> Susa A has, in addition, a number of parallels with Gawra XIII-XII, with Giyan VC and with Sialk III<sub>4-5</sub>.

Giyan VC also has parallels with Gawra XIII-XII as well as a few with the Uruk level of Gawra XI. This

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(1) Loc. cit.

(2) Ibid, p. 223.

therefore suggests that Giyan VC lasted longer than Susa A. Two fine lapis lazuli stamp seals at depths of 14 m. and 11.6 m. were found in this VC level (Pl. 26, 6 and 7).<sup>1</sup>

Giyan VC is closely linked both by a general stage of technical development and by pottery shapes and motifs to Sialk III<sub>4-5</sub>. This middle phase of Sialk III shows surprisingly few connections with its early phase, III<sub>1-3</sub>. It is characterized by new developments in building techniques, making use of stone foundations, by wheel-made pottery, by the advent of animal designs on pottery, by stamp seals and by cast metal. Many of these features suggest that this phase of Sialk III, like Giyan VC, lasted into the Early Uruk period.

Contemporary with Sialk III<sub>4-5</sub> and Giyan VC is Hissar I B: nearly all the Hissar designs occur at Sialk, but not vice versa,<sup>2</sup> showing that the tradition travelled to Hissar from Sialk.

Many close parallels also exist between Hissar I C and the final phase of Sialk III<sub>6-7</sub>. Contacts are closest during 6, after which new types are introduced at Sialk which are not copied at Hissar. Contemporary with Sialk III<sub>6-7</sub> is Giyan VD. The dating of these sites to the Late Uruk period is based on the assignment of Sialk IV to Jadot Nasr, which is made on account of fresh correlations

(1) G. Contenau et R. Ghirshman, Fouilles de Tépé Giyan, p. 42, Pl. 38, nos. 31 and 42.

(2) Dyson, ibid, p. 239.

between Susa C and Sialk IV. These are extremely strong, Sialk producing identical pottery, cylinder seals and, most significantly, identical Proto-Elamite tablets.<sup>1</sup> This is the only time that a plateau site is under the direct influence of the South and it infers a strong ruler in Susa, with a pressing need to establish a far-flung outpost. It would be interesting to know whether there were any similar intermediate sites.

The site of Giyan was deserted at this time (Jemdat Nasr) but Hissar I C may have continued into it. It is hard to determine the exact chronological position of Hissar II A, in which level the painted buff ware tradition began to be infiltrated by a monochrome grey ware. Dyson assigns it to Jemdat Nasr-Early Dynastic I, principally because he considers Hissar II B to cover the periods of Early Dynastic II and III.<sup>2</sup>

Lapis lazuli first occurs at Hissar in II A. We should have expected it to have been found in Hissar I B and I C as well: its failure to appear in these early levels is probably due to the limited scale on which the excavations were conducted.

A single "bille percée" of lapis lazuli was found in Sialk III.<sup>3</sup> Ghirshman does not give any indication as to

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(1) L. le Breton, "The Early Periods at Susa, Mesopotamian Relations", Iraq XIX, p. 104.

(2) Dyson, ibid, p. 240.

(3) R. Ghirshman, Fouilles de Sialk I, p. 56.

which phase of III it was related, but it seems likely that it belonged either to the middle (III<sub>4-5</sub>) or to the late (III<sub>6-7</sub>) phases of the period, because by Period IV lapis lazuli occurs frequently. Unfortunately, however, the rich and numerous small finds of Sialk IV are neither illustrated nor catalogued. In the text of the report there is a reference to many amulets of lapis lazuli, but it fails to give further details.<sup>1</sup>

Two of the tombs found in Sialk IV contained rich jewellery worked in lapis lazuli and gold. Much of the material was ornately inlaid. Circular silver pendants were divided into quarters, which were filled alternately with lapis and bone (Plate 26, 11): a horse-shoe-shaped pendant was also incrustated with lapis and bone (Plate 26, 10): sections of lapis and other stones were set on a bronze fillet with bitumen: ear-rings were made of alternate discs of lapis and gold (Plate 26, 9). In addition many necklaces made of lapis cut into discs, cylinders and "barillets" were found.<sup>2</sup> Dyson suggests that part of IV, in particular these tombs, may have lasted into Early Dynastic times, perhaps even until Early Dynastic III,<sup>3</sup> long after the link with Susa C had ended. He suggests this partly on account of the inlay technique of the

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(1) R. Ghirshman, ibid, pp. 70-71.

(2) Ibid, pp. 69-70 and Plate XXX.

(3) Dyson, ibid, p. 226.

jewellery. Ornate inlay work is, however, common at Khafajah in Jemdat Nasr times.<sup>1</sup>

As well as parallels with Susa, Sialk IV also has some relations with Gawra XII-XA, which Dyson considers may indicate that the period began in Late Uruk. As the levels are much eroded, the duration of Sialk IV must remain problematic. What is known is that it achieved its floruit during the Jemdat Nasr period, when it evinced strong connections with Susa.

The excavations at Susa, begun in the nineteenth century, have been published rather cursorily and it is difficult to establish in what material small finds were made and in which level they were found. Some infant burials discovered in the ruins of the "Construction de l'Est" on the Acropolis are, however, possibly of Jemdat Nasr date.<sup>2</sup> One of the children was buried wearing a necklace of carnelian, quartz and lapis lazuli beads. It seems probable that lapis lazuli was in fairly frequent use at Susa at this time, for it is common at the satellite site of Sialk IV. Susa C also has parallels with Warka VI-III, that is Late Uruk and throughout Jemdat Nasr.

So far, therefore, we have the following cultural picture of Iran:

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- (1) P. Delougaz and S. Lloyd, O.I.P. LVIII, figs. 6, 11 and 26.
  - (2) R. de Mecquenem, "Fouilles de Suse, 1933-1939", M.P.P. XXIX, p. 15.

Late Ubaid = Gawra XIII-XII = Susa A = Giyan VC = Sialk III<sub>4-5</sub> = Hissar I B.

Early Uruk = Gawra XIII-XI ? = Giyan VC = Sialk III<sub>4-5</sub> = Hissar I B.

Uruk = Giyan VD = Sialk III<sub>6-7</sub> = Hissar I C.

Jerdet Nasr = Warka VI-III = Susa C = Sialk IV = Gawra XII-XA = ? Hissar I C and ? Hissar II A.

The slightly divergent buff ware tradition of Bakun A III, which is equipped with a single faceted bead of lapis lazuli (Plate 26, 8),<sup>1</sup> must be fitted into this chronology. Dyson assigns it to the Uruk period, with possible beginnings in Ubaid.<sup>2</sup> Finally, Dyson considers that the painted buff ware found in the small sounding at Pisdeli Tepe in the Solduz valley is a derivative of the Northern Ubaid culture and contemporary with Late Ubaid. Its radio-carbon dates range between c. 3850-3650 B.C.<sup>3</sup>

How does the above archaeological picture of Iran agree with the pattern of trade in lapis lazuli to Mesopotamia? There is certainly a wide sphere of Gawran influence during Gawra XIII-XII, the levels of greatly expanded trade and of the first importation of lapis lazuli. There are contacts with Giyan, Sialk and Hissar. Dyson also argues a contact with Pisdeli, though the sounding there is too small for conclusive proof. The "Gawran" levels at Giyan and Sialk

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(1) A. Langsdorff and D. McCown, Tall-i-Bakun A, O.I.P. LIX, p. 75, Pl. 84, 17.

(2) Dyson, ibid, pp. 243-245.

(3) Ibid, pp. 238 and 248.

have produced a few pieces of lapis lazuli as a further indication that they were involved in the trade.

After the upheaval prior to the Gawra XI settlement, the Iranian plateau sites, Giyan, Sialk and Hissar, continued to develop their own traditions independently of Uruk Gawra, although the archaeological evidence suggests that they continued to supply the site with greatly increased quantities of lapis lazuli.

In the Jemdat Nasr period with Southern Mesopotamian control of the trade, the picture changes dramatically. All occupation at Giyan ceases. Sialk is occupied as an outpost of Susa, which itself is strongly under the influence of Mesopotamia. While Hissar in the North continues to develop independently, it nonetheless remained as an important staging post on the trade route.

The Sialk subjection to Susa may suggest that, at this time, the lapis travelled to Susa from Sialk and thence to South Mesopotamia either by water or by travelling North West between the face of the Kabir Kuh range and the Tigris marshes.

#### The Early Dynastic to Old Babylonian Periods

The floodgates of trade in lapis lazuli were opened to their widest extent in Early Dynastic III and the flow was only slightly diminished in the following Akkadian period. Prior to E.D. III, however, the picture was very

different. In Early Dynastic I no supplies appear to have arrived, although the route was reopened in Early Dynastic II, a feat recorded in the epic, Enmerkar and the Lord of Aratta.<sup>1</sup>

The Guti raids towards the end of the Akkadian period doubtless disrupted the lapis trade as well as the tin trade, but lapis was once again being imported by Gudea of Lagash during the years of Guti "rule".<sup>2</sup> The stone was less extensively worked throughout Ur III, although it was still fairly abundant. Far less occurred in Isin-Larsa, but slightly more has been found in the Old Babylonian period.<sup>3</sup>

In terms of trans-Iranian trade, therefore, we should expect to find a number of rich entrepôts operating during E.D. III and Akkadian times, and evidence of a slightly less prosperous though still wealthy trade in Ur III and Old Babylonian.

There are in Iran two principal ranges of ceramic development, both of which begin in the Early Dynastic period and continue into the early second millennium. The first is a painted buff ware tradition, which is derived from the Mesopotamian Scarlet Ware of E.D. I and II. This occurs at Susa, Period D, and from there influences extend northwards to Giyan, Period IV, which is reoccupied again

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(1) Chapter II, p. 86 and p. 97.

(2) Chapter II, p. 101.

(3) Chapter II, pp. 113-114.

after its abandonment at the end of the Uruk period. From Giyan the painted ware culture travels to Hasanlu VII.<sup>1</sup> Returning to Susa D, the tradition also travels South to sites in the Bakun region and to Bampur and Khurab. From there it influences the Kulli culture, which in its turn is related to the Afghan site of Tepe Mundigak.

The second contemporary cultural zone is a new and foreign one, which was to disrupt the familiar pattern of Mesopotamian influences percolating East. A monochrome grey ware tradition appears in the North on the Turkoman steppes at Shah Tepe, Tureng Tepe and, at a later period, at Yarim Tepe. This culture penetrates the Elburz at the Caspian Gates and appears at Tepe Hissar.<sup>1</sup> Grey wares are first used concurrently with the older painted wares, which they then replace.

#### The Painted Ware Culture of Susa D

The pottery of Susa D is closely linked with all three phases of the Early Dynastic, particularly with the wares of the Diyala region.<sup>2</sup> "Goddess" handles occur in Dd, a feature connected with the final stages of the Early Dynastic (Proto-Imperial) in the Diyala and continuing into the Akkadian period at Ur and Kish.<sup>3</sup> The last phase of Susa D, De, is therefore likely to belong to the Akkadian

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(1) Dyson, ibid, p. 220.

(2) Le Breton, ibid, p. 115.

(3) Chapter II, p. 76.

period. De shares many correlations with the Kish Cemetery A including "champagne" cups and the "goddess" handles mentioned above.<sup>1</sup> It is probable that De lasted through most of the Akkadian period, for it is only after it that massive weapons in the tombs are replaced by hammered ones,<sup>2</sup> a change that occurred towards the end of the period.<sup>3</sup>

Dyson has recognized that the tombs of Giyan IV fall into three groups:<sup>4</sup> the earliest, IV A, is linked with Susa D. IV A consists of graves 119, 117, 116, 114 and 113 with graves 111, 109 and possibly 118 being transitional to the middle phase B. The IV A tombs usually contain at least one red ware bowl and one or more shouldered vessels with the distinctive "bird-comb" motif, a motif derived from the Susa D eagle. The transitional grave 109 contains a vessel decorated with a "tooth" pattern clearly derived from the similarly shaped and decorated vase of Susa Dc. Giyan IV A can therefore be assigned to the Early Dynastic and Early Akkadian periods.

The middle phase of Giyan IV, B, consists of graves 110, 108, and 102, together with the graves from the nearby site of Tepe Djamshidi, Period IV (except for Grave 15). The "bird-comb" motif has now disappeared and patterns are nearly always geometric. Vessels are rather taller,

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(1) Le Breton, *ibid*, p. 117.

(2) *Ibid*, p. 119.

(3) Chapter II, p. 89.

(4) Dyson, *ibid*, pp. 232-235.

while the body has a marked flare towards the base. The distinctive shape, the placing of the design and the motifs can, Dyson tells us, be paralleled in the period of the Painted Orange Ware at Hasanlu VII, the Carbon 14 dates for which give a range of between 2300 and 2100 B.C.<sup>1</sup> As well as correlations with Hasanlu VII, there are also a number of metal parallels with the Akkadian to Ur III levels of Mesopotamian sites.<sup>1</sup> Giyan IV B would, therefore, seem to cover the Late Akkadian, Guti and Ur III periods. Schaeffer, however, would prefer a date not earlier than 2000 B.C., for he points out that the stemmed goblets with loop handles from Grave 108 are unknown elsewhere prior to that date.<sup>2</sup> He supports this late date by the style of the seal found in Grave 102,<sup>2</sup> which is however very poorly illustrated.<sup>3</sup> From this illustration it is difficult to establish to which period the seal may belong.

Dyson's final phase of Giyan IV, C, consists of graves 115, 112, 107, 105, 103 and 101, together with Djanshidi IV grave 15. Graves transitional to the next period, Giyan III, include Giyan 106 and 100 together with Djanshidi III, 8-10, 6 and 7. This final group is characterized by vessels with bulging bodies, interrupted by a ridge around the necks. The area above and just below the

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(1) Loc. cit.

(2) Ibid, pp. 233-234.

(3) G. Contenau et R. Ghirshman, Fouilles de Tépé Giyan, Plate 30.

ridge is decorated by bands of geometric patterns. A strap handle and a spout is an occasional extra. Deep tripod pots are introduced in the terminal graves. Metal objects include bells, ribbed buttons, roll-headed pins and a spearhead with a bent tang. The majority of the parallels Dyson draws for this phase of Giyan belong to the range of 2100 to 1800 B.C.<sup>1</sup>

The terminal date for Giyan IV C is given by a group of graves in Djamshidi III, graves 3-5. These closely follow IV C and a seal of the style of the First Dynasty of Babylon or a little earlier, was found in Grave 3.

The tombs of Giyan III continue without any interruption from the transitional tombs of IV C. The tripod bowl is the guide form and nearly all vessels are painted with simple geometric motifs. The end of III is marked by the intrusion of a new culture in Giyan II, which has connections with Hasanlu VI and with the "Jüngere Chabur" ware from Ashur, dated c. 1600-1200.<sup>2</sup> Giyan III must therefore fall in the period 1800-1600 B.C.

The Southward extension of the Susa D painted ware culture can be seen at two places: in a group of sites in the Bakun region near Shiraz and in the area of Bampur. Vanden Berghe conducted excavations at a number of sites near Bakun and identified a series of cultures beginning prior to Susiana a and continuing into Assyrian times.<sup>3</sup>

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(1) Dyson, ibid, pp. 234-235.

(2) R.H. Dyson, "Problems of Prehistoric Iran as seen from Hasanlu", J.N.E.S. XXIV, p. 195.

(3) L. Vanden Berghe, Archéologie de l'Iran Ancien, pp. 41-45.

Contemporary with the later phases of Susa D, Dc to post-D, and with Giyan IV A-B, is a culture he named after the type-site Tall-i-Qal'eh (Period III). It also occurred at Tall-i-Shoga (Period III) and Tall-i-Taimuran (Period IV). A similar globular vessel with short neck, embellished with a zone of geometric motifs occurs at Qal'eh and in Tomb 102 of Giyan IV B.<sup>1</sup> There are also connections with Dinkha Tepe near Hasanlu and with the Baluchi sites of Bampur and Khurab, whose pottery is related to Susa D. Connections continue East to the Kulli culture and to the Harappan port of Sutkagen Dor. The distinctive Kulli bulls can be seen in Period IV at Mundigak<sup>2</sup> near Qandahar, an extremely rich period with a superb palace, a complex pottery and copper stamp seals similar to those from Shahi Tump, Tepe Hissar<sup>3</sup> and the Seistan sites.<sup>4</sup> The Seistan sites also show a related pottery to that from Mundigak and from the Bampur/Khurab sites.<sup>5</sup>

### The Grey Ware Horizon

The monochrome grey wares first occur at Tepe Hissar in Period II A, where they are used together with the older

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- (1) Compare Vanden Berghe, ibid, p. 42, Pls. 52 b and c, 53 and 57 with Contenau et Ghirshman, Tépe Giyan, Pl.30.
- (2) J.M. Casal, Fouilles de Mundigak, D.A.F.A. XVII, pp. 47-79.
- (3) See p. 224 below.
- (4) W.A. Fairservice, Archeological Studies in the Seistan Basin of South Western Afghanistan and Eastern Iran, p. 80, fig. 38.
- (5) Ibid, figs. 37 and 38.

painted wares. Some forms of the two traditions are identical, for instance a cup on a high ring base,<sup>1</sup> and a fruit-stand on a medium pedestal.<sup>2</sup> A distinctive new monochrome form is a shallow bowl, sometimes carinated, placed on a tall thin pedestal.<sup>3</sup> Period II A was succeeded by II B when the monochrome wares are the principal ceramic, painted vessels being decadent survivals. There are many high pedestal wares, as well as a new globular jar with a narrow neck.<sup>4</sup> A new decorative technique is introduced, that of applying "ribs" and "studs".

"Studded" and "ribbed" jars are found at the Turkoman steppe site of Shah Tepe in Period III, the earliest, although none of the high pedestal cups are reported.<sup>5</sup> The range of vessels and methods of applying the decoration are much more varied at Shah Tepe<sup>5</sup> than at Hissar, indicating that the "ribbed and studded" ware tradition travelled to Hissar from the North and imposed itself on the original grey ware people of Hissar II A.

A brief mention is made of similar wares being found at Tureng Tepe,<sup>6</sup> although they do not occur at nearby Yarim

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- (1) E.F. Schmidt, Tepe Hissar, Pl. XXII, H.4549, painted, is similar to Pl. XXIII, H.4577, monochrome.
  - (2) Ibid, compare Pl. XXI, H.4460 and H.4743, with Pl. XXIII, H.2999.
  - (3) Ibid, compare Pl. XXIII, H.4344, H.2998 and H.2889.
  - (4) Ibid, Pls. XXV-XXVI.
  - (5) T.J. Arne, Excavations at Shah Tepe, Iran, p. 172 ff. and Pls. XLIII - XLVI.
  - (6) F.R. Wulsin, "Excavations at Tureng Tepe near Astarabad", Bulletin of the American Institute for Persian Art and Archaeology 2, p. 9, Pls. XII, 3-5, and XIV b.

Tepe, as far as can be estimated from present reports.<sup>1</sup>

The evidence for the dating of Hissar II B is scanty. Mesopotamian E.D. III wares are decorated with applied "ribs" and "studs", as well as with incisions.<sup>2</sup> The appearance is, however, very different from the burnished Hissar wares.

Hissar metal work is technically of a high standard and provides a number of parallels. The copper dagger blade, H.3012,<sup>3</sup> compares both in shape and in the presence of a marked medial rib with the typical E.D. III leaf-shaped blade from Ur.<sup>4</sup>

The Hissar II B double spiral pin, H.4856, and double spiral pendants, H.2659 and H.2982,<sup>5</sup> have various correlations. The pin is a more complex and perhaps, therefore, later version of the Sialk IV pins.<sup>6</sup> The pin spiral and the pendants are closely similar to a double spiral gold wire pendant from E.D. III Ur.<sup>7</sup> The double, or even quadruple

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- (1) V.E. Crawford, "Beside the Kara Su", Bulletin of the Metropolitan Museum, Vol. 21 N.S., April 1963, pp. 263-273.
  - (2) P. Delougaz, O.I.P. LXIII, pp. 102, 143-4, Pls. 105-6.
  - (3) E.F. Schmidt, Tepe Hissar, Pl. XXIX.
  - (4) U.E. II, p. 308, Pl. 228, Type 3. For other correlations, see K.R. Maxwell Hyslop, "Daggers and Swords in Western Asia", Iraq VIII, pp. 12-13. Mrs. Maxwell Hyslop assigns the Hissar blade to a period 2400-1600, which may be a little late.
  - (5) E.F. Schmidt, Tepe Hissar, Pls. XXIX-XXX.
  - (6) R. Ghirshman, Fouilles de Tépé Sialk I, Pl. XCV, a, e.
  - (7) U.E. II, Pl. 134, U.9656.

spiral motif remains popular for many centuries over a wide geographical area.<sup>1</sup> In Anatolia they occur in contexts dated between 2600-2300.<sup>2</sup>

An indication of the widespread connections of this settlement at Hissar II B may be the presence of compartmented copper seals.<sup>3</sup> These occur at Mundigak, Shahi Tump and the Baluchi sites,<sup>4</sup> but there they consist only of a single seal, while at Hissar the seal is made of a number of seals soldered together. Copper seals from Hissar III B and C are more nearly comparable to the Southern ones.

The evidence for the date of Hissar II B, while not particularly conclusive, suggests that it belongs, in the main, to E.D. III. It may begin a little earlier and it is probable that it lasted into Akkadian times.

The pottery of Hissar III B remained a monochrome grey ware but was decorated with a band of "pattern burnish". The usual forms included a tall jar with narrow neck and globular body, which was sometimes carinated, and a range of bowls and jugs.

As in Hissar II B, there were strong links with the steppe sites, Tureng Tepe and Shah Tepe (II B), and for the first time with Yarim Tepe. A number of vessels were common

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- (1) For a discussion of occurrences see M.E.L. Mallowan, "Excavations at Brak and Chagar Bazar", Iraq IX, pp. 171-176: and K.R. Maxwell Hyslop, "The Ur Jewellery", Iraq XXII, pp. 107-108.
  - (2) R.H. Dyson, "Problems in the Relative Chronology of Iran 6000-2000", Chronologies in Old World Archaeology, p. 240.
  - (3) E.F. Schmidt, Tepe Hissar, p. 119, Pl. XXVIII, H.2183.
  - (4) S. Piggott, Prehistoric India to 1000 B.C., p.220: and see p. 226 below.

on the steppe, but did not occur at Hissar, for instance a distinctive carinated globular jar, the bottom half of which was sharply concave<sup>1</sup> and a nearly flat plate placed on an elongated pedestal base.<sup>2</sup>

A much-needed chronological guide for the Hissar III B culture has been provided by a Carbon 14 date of  $2166 \pm 249$  B.C.<sup>3</sup> for Level 4 of Bronze Age Yarim Tepe. Since there are eight levels prior to Level 4 at Yarim<sup>4</sup> we may assume that the period began considerably earlier.

There are a number of parallels between Mesopotamian sites and Hissar III B, for instance a marked architectural similarity between the Ishtar Temple E at Ashur, built by Zariqu, envoy of Shu-Suen, and the Burned Building at Hissar.<sup>5</sup> It has already been noted that the gold fillets from Ashur are comparable with those from Hissar.<sup>6</sup> And finally the ovoid gold bead with a central tube<sup>7</sup> can be matched with examples from Ur, ranging in date from E.D. III to Ur III, with beads from Mohenjo Daro and from Troy II g, c. 2300 BC.<sup>8</sup>

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- (1) T.J. Arne, Shah Tepe, Pl. XXV, 189, Pl. XXVIII, 204, 206, 208, etc.: F.R. Wulsin, Tureng Tepe, Pl. VIII, and V.E. Crawford, Yarim Tepe, p. 272, Pl. 14.
  - (2) T.J. Arne, Shah Tepe, p. 183, figs. 345-347: F.R. Wulsin, Tureng Tepe, Pl. XIII, 3.
  - (3) Dyson, ibid, p. 248.
  - (4) V.E. Crawford, Yarim Tepe, p. 273.
  - (5) M.E.L. Mallowan, Early Mesopotamia and Iran, pp. 117-118.
  - (6) Chapter II, p. 105, note (1).
  - (7) E.F. Schmidt, Tepe Hissar, p. 227, fig. 138, Pl. LXVI. From the Burned Building.
  - (8) Sir Mortimer Wheeler, The Indus Civilisation, p. 94.

Compartmented copper seals occur again, one of which can be closely paralleled at Mundigak and the Seistan sites.<sup>1</sup>

Archaeologically therefore the date of Hissar III B seems to be contemporary with the Third Dynasty of Ur, perhaps beginning a little earlier, in the time of Gudea, a date which agrees well with the C.14 figure. The poorly defined transitional period, III A, would then belong to the Late Akkadian and Guti eras.

The succeeding settlement of Hissar III C was extremely prosperous and produced objects of considerable luxury. A monochrome grey ware was used, still decorated with pattern burnishing although more of the vessel was now covered. The typical forms include "canteens" with twin lug handles and globular bottles with long trough spouts. A similar culture flourished at Shah Tepe (II A), and possibly also at Tureng Tepe, although not at Yarim (as far as can be seen from the material published at present).

Widespread foreign connections are indicated by the presence of amber, possibly from the Aegean, and etched carnelian beads, an Indian industry. Compartmented copper seals occur again, although designs tend to be more complex.

The date of Hissar III C has long been disputed, some scholars suggesting that it continued as late as 1500 B.C. on account of analogies with Sialk V, while others claim that it was contemporary with E.D. III. The form of the

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(1) Compare Tepe Hissar p. 198, fig. 118, H. 2697, with Casal, Fouilles de Mundigak, Pl. XLV, B. 3.: and see p. 224 above.

copper blades with midrib and hooked tang with button can be paralleled in Ras Shamra in contexts dated 2200-1900 B.C.<sup>1</sup> The stiletto lances are related to types found at Til Barsib and Soli, also dated c. 2200-1900.<sup>2</sup> Dyson has noticed a parallel between the agate bead forms at Hissar and Ur III material from Ur held in Philadelphia.<sup>3</sup> Some of the trough-spouted vessels recall types used in the Cappadocian karum, c. 1900, as also does the use of lead.<sup>4</sup>

While the evidence still shows affinities with Ur III, as does Hissar III B, such influences may well have lasted longer than that period in Mesopotamia, particularly as III B shows a much closer connection. Hissar III C can probably therefore be assigned to c. 2000 ± to c. 1800±.

Lapis lazuli occurred relatively plentifully in Hissar III. The "Dancer" in the Burned Building of III B had a necklace with lapis beads, shaped as rectangles, tubes, lozenges and crosses. Amulets of the stone in the form of turtles, rams heads, double horns and crescents<sup>5</sup> have been found. Considerably less lapis occurs in Period II<sup>6</sup> and the whole of Shah Tepe has produced only four beads of lapis.<sup>7</sup>

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- (1) K.R. Maxwell Hyslop, Iraq VIII, p. 33, Type 30 d: Tepe Hissar, Pl. L, H. 3582.
  - (2) R.H. Dyson, ibid, p. 242.
  - (3) Ibid, p. 241.
  - (4) M.E.L. Mallowan, Early Mesopotamia and Iran, p. 122.
  - (5) Tepe Hissar, pp. 223-232.
  - (6) Ibid, p. 122.
  - (7) T.J. Arne, Shah Tepe, p. 286.

Lapis lazuli occurred on a number of sites using wares related to the pottery of Susa D. The Harappan civilization in India, coextensive with that of the E.D. III to Agade periods in Mesopotamia, only used lapis lazuli very rarely: two beads and a "gamesman" worked in this material have been found at Mohenjo-Daro;<sup>1</sup> three beads and a fragment of inlay from Harappa itself;<sup>1</sup> and fifteen beads from Chanhu-Daro.<sup>2</sup> At the earlier site of Nal in Southern Baluchistan, lapis lazuli was slightly more frequent and several strings of beads have been found.<sup>1</sup> It also occurred on sites in Seistan<sup>3</sup> and comparatively plentifully throughout all periods of the Afghan site of Mundigak, particularly during Period IV.<sup>4</sup>

For the first time, therefore, and as we shall see the only time, we have a distribution of lapis lazuli finds along the usual Northern route and in sites in India and Baluchistan. There are archaeological contacts with Mesopotamia from both the North and the South. We know, both from literary and archaeological evidence, that there was a flourishing sea-borne trade between Mesopotamia and India in Harappan times. We also have one puzzling inscription

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- (1) Sir Mortimer Wheeler, The Indus Civilization, p. 64.
  - (2) E.J.H. Mackay, Chanhu-Daro Excavations, 1935-6, p. 209.
  - (3) W.A. Fairservice, Archeological Studies in the Seistan Basin, p. 74, fig. 35.
  - (4) J.M. Casal, Fouilles de Mundigak, pp. 240-243.

recording lapis lazuli coming from Meluhha,<sup>1</sup> which has been identified as being in India. This may be a remembrance of a period when lapis lazuli was imported from India and if this did occur it must have been during the period from Early Dynastic to Ur III, the time of the greatest contact.

The question of which route was used for the transportation of lapis lazuli to Mesopotamia remains. It seems probable that the Northern route was employed, for apart from Mundigak, which could well have been supplied independently, quantities of lapis lazuli found in the Southern sites were minimal. Indeed it seems likely that these small quantities were brought back from Mesopotamia by Indian merchants, rather than transported direct from the Afghan source. This is particularly likely when the marked lack of interest in the stone on these sites is remembered.

Although along the Northern route we know of only one entrepôt to date, that one is the rich site of Tepe Hissar and during the periods of massive importations of lapis lazuli to Mesopotamia we have contemporary rich levels there: during the Early Dynastic-Akkadian periods, the wealthy settlement of Hissar II B, and for Ur III we have the even more prosperous III B. Probably belong to a time shortly before 2000 B.C. is the rich treasure of Dorak<sup>2</sup> in

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(1) See Chapter III, p. 178.

(2) The treasure of Dorak presents us with many problems, particularly as no further evidence than the drawings in the I.L.N. of 28.xi.59 has ever appeared. A box inscribed with the name of Pharaoh Sahure of the V Dynasty would suggest a date prior to 2000 B.C., even if it were an antiquity when incorporated in the treasure. We are not yet entitled to draw conclusions from it. See p.30(4).

Anatolia, which contained lapis lazuli, and this perhaps explains the high prosperity of Hissar III B and C, for these settlements were supplying a new market, that of Anatolia, when the original importer, Mesopotamia, was requiring less.

Giyan does not appear to have taken part in the trade, no object of lapis lazuli being found there at this time. We must await the Hasanlu report to establish whether that site did so.

The Kassites to the Persians, c. 1600-300 B.C.

There was a vigorous trade in lapis lazuli probably throughout the whole of the Kassite period (c. 1600-1000); the evidence is strongest during the reigns of Kadashman-harbe, Kadashman Enlil I and Burnaburiaš II (c. 1450-1350). Knowledge of the period 1070-911 is incomplete owing to the disturbances caused by incursions of the Aramaean tribes. Shortly thereafter Assyria obtained lapis lazuli as a part of the tribute of the Medes. But during the Neo-Babylonian empire supplies were probably interrupted, owing to the rivalry with the neighbouring empire of the Medes. The all-conquering Persians, however, controlled the whole length of the lapis route from Badakhshan and therefore had ready access to supplies. Even so, the stone markedly declined in popularity.

Unfortunately none of the excavated/<sup>Iranian</sup>sites immediately prior to the Achaemenian period have produced any objects of lapis lazuli, at least as far as present excavation reports record. This may suggest that none of these sites lay on the East-West trade route, or that they were not interested in the material.

In attempting an outline of the archaeological setting in Iran we may note that settlement levels of the period c. 1600-1000 have been found at Hasanlu, Giyan, Sialk, Khorvin-Chandar and Marlik.<sup>1</sup> At Giyan, Period II, a buff ware, gaily painted with both geometric and bird motifs predominated. Similar wares also occurred in Hasanlu VI.<sup>1</sup> These painted wares were succeeded by a grey ware tradition covering a widespread area. It is found at Marlik near Resht, at Khorvin-Chandar near Tehran, at Sialk, Period V, at the two earlier phases of Giyan I, 3 and 4,<sup>2</sup> at Hasanlu Period V, and at the nearby sites of Yanik, Geoy and Tash Tepes.<sup>3</sup> It is perhaps relevant to record that a distinctive type of ridged mace has been found in Kassite Babylonia, inscribed with the name of Ulamburiaš (c. 1450), in Luristan and at Marlik.<sup>4</sup> We know that the Kassites (and the Mitannians) had access to plentiful supplies of lapis lazuli,<sup>5</sup> perhaps

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- (1) R.H. Dyson, "Proto-historic Iran as seen from Hasanlu", J.N.E.S. XXIV, pp. 193-194.
  - (2) T. Cuyler Young, "A Comparative Ceramic Chronology for Western Iran, 1500-500 B.C.", Iran III, pp. 62-68.
  - (3) Dyson, ibid, pp. 195-198 and 211, Table 2.
  - (4) Compare, R. Koldewey, W.V.D.O.G. 15, Pl. 8, fig. 77, with E.O. Negahban, A Preliminary Report on Marlik Excavation, Gohar Rud expedition, Rudbar, 1961-2, Pl. XIII A.
  - (5) Chapter II, p. 115.

themselves organizing the trade. This mace indicates contacts with North Iran as well as with the East.

The early grey ware tradition lasted from c. 1250-1000 and continued in a slightly different form from c. 1000 to c. 750 B.C. These late grey wares occur at Marlik, Hasanlu IV, Geoy and at the Zendan of Takht-i-Suleiman.<sup>1</sup> This was the period when both Assyria and Urartu were striving to gain control of the fertile, horse-raising districts in North West Iran. Evidence of strong ninth century Assyrian influence has been noted at Hasanlu.<sup>2</sup>

From Assyrian records<sup>3</sup> we know that from c. 850 the Medes had settled in Iran and that they were the suppliers of lapis lazuli: they were strategically placed so as to straddle or block the trade route to the East, and were in a position to send lapis lazuli to Urartu as well as Assyria. It has been suggested that Sialk VI was a Median settlement, but proof is lacking.<sup>4</sup> Dyson considers that Sialk VI or B belongs to the period immediately after Hasanlu IV, and possibly preceding Hasanlu III. The pottery of Sialk VI (c. 750-650)<sup>4</sup> breaks away from the monochrome tradition of the two preceding eras and once again employs paint on a buff ground to depict lively scenes featuring winged and

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(1) Dyson, ibid, pp. 197-203.

(2) Ibid, p. 199.

(3) Chapter II, pp. 123-124.

(4) Dyson, ibid, pp. 200-201 and 207-208.

unwinged horses and bulls, combined with complex geometric motifs. Dyson relates this revival of painting to that seen in the later settlement of Hasanlu III,<sup>1</sup> where wares are decorated with simple geometric designs. He considers that Hasanlu III belongs to the period c. 650-550 B.C. Contemporary sites include Ziwiye, the last phase of Giyan I, the late phase of the Zendan and the earliest settlement of the Achaemenid village at Susa.<sup>1</sup>

The following period is early Achaemenian in date and can be seen at the final stage of Hasanlu III, Achaemenid village II and III and Pasargadae.

Much more information is needed on Iranian archaeology from 1600-500 before the trade routes can be discerned in detail. We know that the Kassites had ample supplies of lapis lazuli, but we do not know where their entrepôts were sited, and the same applies to the Medes, although it is likely that the latter traded quantitatively less. With Persian control of the entire length of the route access to the material would have been easy, but the paucity of finds suggests a marked decline in popularity, a trend begun during the Neo-Babylonian empire, if not in Neo-Assyrian times. No lapis lazuli appears to have been used in Seleucid times.

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(1) Dyson, ibid., pp. 203-213.

SUMMARY

For many centuries Western man has associated the colour blue with the idea of purity and truth. Since the earliest development of mediaeval painting this colour has traditionally been used for the clothing of the Virgin Mary. The origin of this custom is a matter of conjecture, but it is possible that it is an archaic survival of the tradition of early Mesopotamia where  $Z\acute{A}Z\grave{A}.G\grave{I}N$ , Sumerian for lapis lazuli, was sometimes equated with ebbu, meaning pure or bright.

The long standing importance of lapis lazuli to the ancient Near East is shown by the early date of its original importation during the Late Ubaid period. This was the first moment that man had sufficient wealth and leisure to begin the quest for luxuries. Hitherto his trade had been confined to the import of essential materials, such as flint and obsidian for blades. But during Gawra XIII he initiated a wide ranging luxury trade, and for the first time we find beads of turquoise, amethyst, agate, jadeite, beryl and lapis lazuli. Many of these materials can be found on the Iranian plateau, but there are only rumours of a source of lapis lazuli in Iran, which cannot be substantiated. The most likely source for this early Gawran lapis is, in fact, the mine at Badakhshan, some fifteen hundred miles to the

East across desert and mountain. The awareness of this distant source and the organization of its exploitation are yet another indication of the imagination and ability of man in these days of his first urbanization.

While all the evidence points to Badakhshan as the most probable origin, it has not been possible to substantiate this geologically by such methods as microscopic examination of samples and analysis of components, because no two pieces of the stone are exactly alike. Specimens collected at Badakhshan cover a wide range of colours from deep indigo to the palest blue, and many of these Badakhshan pieces can be matched by archaeological samples. The lapis lazuli inlay in the Standard of Ur, for instance, is of varied quality, closely comparable to the material gathered at Badakhshan. While this is the most feasible mine, there are two other possibilities, Lake Baikal in Eastern Siberia and the Pamirs. However, both these alternative sources must be largely discounted for geographical reasons - Baikal is some three thousand miles from Mesopotamia and the Pamir source lies at a great height and has never been commercially mined. Furthermore those pieces of lapis lazuli reported to originate from Baikal which the author has seen have all been of a consistently poor quality.

With Badakhshan established as the starting point of the lapis lazuli trade, the next problem was to investigate who required the stone and why. We have already said that the Gawrans initiated the trade and it is ancient Mesopotamia which continued to be the focus of the trade. It is only in the cities of that country (apart from Egypt, which is outside the scope of this thesis) that large numbers of objects made of lapis lazuli have been found: in contrast, areas nearer the source and the staging posts engaged on the trade have produced very few.

A combination of the archaeological and literary evidence has indicated the "pattern" of the use of lapis lazuli. We have established that Gawra appeared to hold almost a monopoly from its initiation of the trade in the Late Ubaid period through the influx of Uruk people from the South in Gawra XI to the Late Uruk period of Gawra VIII, when the monopoly was seized from them by the South. During the initial part of this Northern monopoly we find sites on the Iranian plateau with close cultural connections with Gawra. These connections decreased, however, after the take-over of Gawra by Uruk peoples.

When the organization of the lapis trade was in Southern hands there was not only a wider distribution of lapis lazuli within Mesopotamia itself, but also, during the

Jemdat Nasr period, a considerable use of the stone for cylinder seals and beads. The seizure of the lapis monopoly from Gawra had repercussions in Iran. Occupation on the chain of sites - Giyan, Sialk and Hissar - supplying Gawra tended to terminate. Susa appeared to have overpowered the final settlement of Sialk III and to have established a distant colony there, for the two sites shared an identical culture and writing at this period. This common culture ceased in Early Dynastic I. It has, therefore, been argued that during Jemdat Nasr times the lapis lazuli reached Mesopotamia via Susa and its outpost at Sialk.

In the Jemdat Nasr period Mesopotamian trade had been extensive, reaching as far as Egypt. These flourishing trading conditions appeared to have undergone considerable change in Early Dynastic I, for contacts were much less wide-ranging. This limitation was reflected in the lapis trade, which appeared to have suffered a total eclipse. The reasons for this dramatic change of policy by the city states has not yet been established. It cannot be attributed to sudden invasion and war, for there is no archaeological evidence for such a break between Jemdat Nasr and Early Dynastic I levels, and also there is no evidence of sudden poverty.

The "isolationist" policy of Early Dynastic I is reversed in Early Dynastic II, and an epic records the name of the man who achieved this. Enmerkar of Uruk waged a "cold war" on the Iranian state of Aratta, which had plentiful supplies of lapis lazuli and other precious materials, but was unwilling to barter them for Sumer's surplus grain. Enmerkar won his "war", and in Early Dynastic II we again find objects of lapis lazuli.

Lapis lazuli achieved its greatest popularity in Early Dynastic III when vast quantities of the stone were imported into Sumer to be used for a wide variety of purposes. A vivid record of the wealth of this period has been preserved in the magnificent "royal" tombs and death pits of the Royal Cemetery at Ur, the numerous occupants of which were lavishly endowed with grave gifts of lapis lazuli. It is argued in this thesis that these "royal" tombs belonged to a single period, that of Early Dynastic III, and that there is insufficient evidence to support the alternative theory that they originated in Early Dynastic II. We may be sure that the vast wealth consecrated to the dead of these "royal" tombs had a specific purpose and that the three materials principally used, lapis lazuli, carnelian and gold, possessed important ritual values. Lapis lazuli was never again to be used so effectively or so lavishly in Mesopotamia.

It has been suggested elsewhere that there was a decline both in the use and the quality of lapis lazuli during the following Akkadian period. Historically this is surprising, for the formation of the first empire should have encouraged rather than restricted trading conditions - at any rate until the early Guti raids weakened Akkadian hegemony. Archaeologically, this suggestion has been disproved, for large numbers of beads and seals belonging to the period have been found. Many of these beads and seals come from graves in cemeteries, for which a new chronology has been proposed here. A number of the simple inhumation graves of the Royal Cemetery have been newly assigned to the Akkadian period on the evidence of seals and pottery and many of these are equipped with lapis lazuli grave gifts. On similar glyptic and ceramic evidence, most of the Cemetery A and Red Stratum graves at Kish, once considered to be Early Dynastic III, have been reassigned to the later period. Until the discovery of royal Akkadian graves, the full dimensions of the art of the period must remain unexplored. But even relying on the available evidence of the simple inhumations excavated to date, we have ample proof of the continued high popularity of lapis lazuli.

In Iran the rich level of Tepe Hissar II B suggests the wealth of the entrepôts on the lucrative lapis route

during the time of the stone's greatest use - Early Dynastic III to the Akkadian eras. Other commodities will also have been transported along this important East-West route and their effect on the economy of the staging posts must not be overlooked.

The state of the lapis trade during the period of Gutian anarchy is uncertain. Too little is at present known of the archaeology of this dim historical period and, while it is possible to assign certain graves to the Post-Akkadian period, these may belong either to the Guti or to the Third Ur periods. With the lack of strong centralized control during Guti "rule" we should, however, expect to find the trade interrupted.

Towards the end of the Guti period the kings of Lagash succeeded in establishing a certain degree of autonomy, and Gudea proudly recorded how he obtained supplies of lapis lazuli and other precious materials for the embellishment of his temple, E-ninnu.

Lapis lazuli regained some of its former popularity during the Sumerian renaissance under the Third Dynasty of Ur. While the mausoleums of the kings of Ur had been plundered in antiquity prior to their excavation, untouched tombs of important officials of that dynasty have been found and once again the principal corpse was accompanied

by a retinue of servants, all of whom were equipped with jewellery. Lapis lazuli was a less conspicuous component of the necklaces of the time, which are, however, distinguished by the variety of materials employed. As well as lapis lazuli seals and beads of the period, detailed business records and inventories of workshops have been found in which the use of lapis is recorded.

During the centuries of weak Isin-Larsa rule, little lapis lazuli was used, but imports rose slightly in the Old Babylonian period. From the Third Dynasty to the Old Babylonian periods lapis lazuli was principally favoured for the carving of cylinder seals bearing presentation scenes. This was doubtless because of the belief that the stone was particularly propitious in attracting the favourable attention of a deity. Tepe Hissar was again an important entrepôt on the lapis route for these periods and enjoyed high prosperity. It is possible that it was also exporting lapis lazuli to Anatolia at this time.

The Kassites, who themselves had originated in Iran, acted as middlemen in the lapis lazuli trade. They imported large quantities of the stone and exported it to other lands, principally to Egypt in exchange for gold, and possibly also to Hatti. The richest Middle Assyrian grave at Ashur was lavishly equipped with lapis lazuli, which was

doubtless also supplied by the Kassites. Despite the passage through Babylonia of so much of the material, remarkably little has actually been found in that country, although this may be due to the fortuity of excavation. The principal deposit of lapis lazuli seals of the period has recently been found in Thebes.

The Iranian entrepôts for the Kassite trade are not yet known and Tape Hissar was deserted. Immigrants entering the country from the North were disturbing the established cultural patterns and none of the newly-occupied sites have so far produced any objects of lapis lazuli. Most of their jewellery was composed of gold and "Egyptian faience" beads.

Steady pressure by Aramaean tribes from the West finally overturned both the Babylonian and Assyrian monarchies in about 1050 B.C. and little is known of occurrences in Mesopotamia for over a century. Archaeologically as well as historically this is a blank period. We hear of lapis being used again shortly after 850 B.C., during the reign of Shalmaneser III, the first Assyrian monarch to come into contact with the Medes, who were strategically located across the East-West trade route. For the next two centuries Assyria and Babylonia obtained their lapis as part of a compulsory tribute from the Medes. But despite

assured, if not voluntary, supplies of the stone, the popularity of lapis lazuli decreased steadily: its only important function at that time was for a group of extra-large Babylonian dedicatory seals. Most seals and beads were now made of other materials, among which the chalcedonies were highly favoured.

The employment of lapis lazuli practically ceased during the short period of the Neo-Babylonian empire. The cessation of supplies was probably due to a combination of two reasons: first, declining popularity of the material; and secondly, lack of availability, for the Medes, former allies of the Babylonians, controlled the route to the East.

With the formation of the Persian empire, the entire length of the trade route, as well as access to and control of the mines themselves, was under Persian rule. Despite these favourable conditions, lapis lazuli was still rarely used and we can only imagine that there was no longer any demand for the stone. Perhaps the Persians did not believe in its particular virtues. Alternatively, some of the rich veins may by that time have been worked out, or local political obstructions, of which we now know nothing, may have barred the way to the mine.

It has been argued here that the most probable route along which the lapis lazuli was transported was the

Northern route, that is the one passing near the modern towns of Balkh, Nishapur, Tehran, Hamadan and Kermanshah. There is little evidence to suggest use of the geographically possible Southern route via Kabul, the Khyber Pass, the Indus valley and up the Persian Gulf, even though we know that there were trading contacts between the Indus valley sites and Mesopotamia during Early Dynastic III and Agade. Indeed, the facts suggest that the small quantities of lapis lazuli occurring in India were imported from Mesopotamia rather than directly from the Afghan source.

A further aim of this thesis has been the investigation of the significance which the stone possessed. The colour of lapis lazuli, which can be matched in the sky, has an immediate and obvious association with celestial, rather than chthonic, deities. Therefore, when Inanna arms herself against the powers of the underworld with the seven ordinances we find that many of these are made of lapis lazuli. As we have noted before, the very word for lapis lazuli is equated with ebbu meaning pure or bright, and that adjective, or one similar to it, is nearly always attached to the contemporary description of any object carved from lapis lazuli.

One of the virtues of the stone was that it was propitious for attracting a god's favour and another that it

established mercy. It also had some medical and ritual value, doubtless on account of its purity, which made it valuable in the fight against evil.

This thesis is one of the few within the framework of Near Eastern archaeology to devote itself to the study of a material in all its aspects. It has been possible to establish the source, to propose a trade route and to analyse the use of the material throughout three millennia, but additional precise archaeological evidence is required to confirm or refute these proposals.

APPENDIX A

Pottery chart showing vessels occurring  
in E.D. III, Akkadian, Post-Akkadian, and  
Third Dynasty of Ur graves at Ur<sup>1</sup>

ED III	Late ED III	Akkadian	Post- Akkadian	Third Ur	Diyala parallels and comments <sup>2</sup>
1	-	-	-	-	Pl.170, ED II-III
4	-	4	-	4	Pl.96a, ED III-PI <sup>3</sup>
5	5	5	5	5	Pl.146, ED III-EA <sup>4</sup>
6	-	-	-	-	
7	7	-	-	-	Pl.46h, ED III: and Pl.49c, ED I-II.
-	16	-	-	-	Pl. 153, 171, PI - Ur III
18	-	-	-	-	Pl. 169, J.N. <sup>5</sup>
-	-	-	19	-	
21	-	21	-	21	
23	-	-	-	23	
-	-	-	-	24	
-	-	-	-	29	Pl. 148, Ur III
-	-	30	-	-	
-	-	-	-	32	
-	-	-	-	34	
-	-	-	-	36	
-	-	-	-	38	

(1) See Chapter II, pp. 75-76.

(2) P. Delougaz, O.I.P. LXIII.

(3) "PI" = Proto-Imperial or Late Early Dynastic III.

(4) "EA" = Early Akkadian: "LA" = Late Akkadian

(5) "JN" = Jemdat Nasr

<u>ED III</u>	<u>Late ED III</u>	<u>Akkadian</u>	<u>Post- Akkadian</u>	<u>Third Ur</u>	<u>Diyala Parallels and comments</u>
-	-	-	-	41	Pl.158. Haematite wash. L.A.
-	-	-	-	42	
-	-	44	44	44	Pl.160. Sometimes haematite wash.L.A.
45	45	45	45	-	
-	-	46	-	-	
-	49	-	-	-	
-	-	50	50	50	Pl. 164, ED III.
-	-	-	-	53	
59	-	-	-	-	
-	-	-	-	60	
61	61	-	-	-	Pl. 184, Larsa.
62	-	-	-	-	
63	-	-	-	-	
-	67	-	-	-	
68	-	-	-	-	
69	-	69	-	-	
-	-	-	-	75	
-	-	76	76	76	Pl.189, Larsa or Old Babylonian.
-	-	78	-	-	
-	-	-	-	79	Pl. 194, L.A.
-	-	-	-	80	
-	-	-	-	81	
-	83	83	-	83	Pl. 187, JN-PI
-	-	84	-	-	
88	-	88	-	-	

<u>ED III</u>	<u>Late ED III</u>	<u>Akkadian</u>	<u>Post- Akkadian</u>	<u>Third Ur</u>	<u>Diyala Parallels and comments</u>
90	-	-	-	-	
92	-	-	-	-	
-	-	93	-	-	Pl. 185, ED III
-	-	-	-	94	
-	-	-	-	97	
-	-	-	-	98	
100	100	100	100	-	
101	-	-	-	-	
102	-	102	-	-	
-	-	-	103	-	Pl. 185, E.D. III
104	-	-	-	-	
105	-	-	-	-	
106	106	-	-	-	Pl. 164, ED III
108	108	108	108	108	
109	-	-	-	-	Pl. 150, ED III, Pl. 151, ED III-LA
-	-	-	-	110	
-	-	117	117	117	
-	123	-	-	-	
-	-	-	-	124	
-	-	-	-	126	
-	-	-	127	-	
-	-	129	-	-	
-	-	132	-	-	
-	-	-	-	133	
-	-	141	-	-	

<u>ED III</u>	<u>Late ED III</u>	<u>Akkadian</u>	<u>Post- Akkadian</u>	<u>Third Ur</u>	<u>Diyala Parallels and comments</u>
-	-	142	-	-	
143	-	-	-	-	
-	-	144	-	-	
-	-	147	-	-	
148	-	148	-	-	Pl. 185, ED III
154	-	-	-	-	
-	-	-	155	-	
-	-	157	-	-	
-	-	160	-	-	
-	-	-	-	161	
-	-	162	162	-	
-	-	163	-	-	
169	-	-	-	-	
173	-	173	-	-	
174	-	174	174	-	
179	-	-	-	-	
-	-	184	184	-	
186	186	-	-	-	
-	-	187	-	-	
-	-	-	-	191	
193	-	-	-	193	
-	-	194	-	-	Pl. 177, ED III- Larsa
-	-	-	196	196	
-	-	197	-	-	Pl. 191, PI-LA
-	-	198	-	198	Pl. 176, Akk.

<u>ED III</u>	<u>Late ED III</u>	<u>Akkadian</u>	<u>Post- Akkadian</u>	<u>Third Ur</u>	<u>Diyala Parallels and comments</u>
-	-	199	-	199	
-	-	-	-	200	Pl. 191, PI - EA
-	-	201	-	-	Pl. 184, Gutium-Ur
-	-	202	-	202	III: Pl. 194 ED III - Akk.
203	-	-	-	-	
208	208	-	-	-	Pl. 185, ED III-EA
209	-	-	-	-	
211	-	-	-	-	
-	-	-	214	-	
215	-	-	-	-	Pl. 182, PI - Ur III
-	-	-	-	219	
-	-	-	-	221	Pl. 145, PI
223	-	-	-	223	
-	-	-	224	-	Pl. 163, Ur III. Haematite wash.
-	-	226	226	-	
-	-	227	-	-	
231	-	-	-	-	
-	-	239	-	-	
-	-	241	-	-	Pl. 141, ? Akk.
243	-	-	-	-	Pl. 174, EDIII & Kish 'A' & Red Stratum
244	-	-	-	-	Pl. 172, ED III
-	-	-	-	248	
-	-	-	251	-	

APPENDIX B

An Analysis of the 242 graves, which contain lapis lazuli, in the Royal Cemetery at Ur.<sup>1</sup>

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This re-assessment of the Royal Cemetery is based on two forms of evidence - ceramic and glyptic. The pot-types contained in a tomb or grave were checked against the chart of dated pottery, see Appendix A: and an attempt was made to place the seals in their stylistic context. While it is often possible to assign seals to a specific period because of the designs carved on them, this principally applies to finely engraved seals of the "classic style" of a glyptic period. There is a considerable margin of error in the placing of indifferent examples.<sup>2</sup>

The "Predynastic" Cemetery

? PG 13: Beads, U.7893; Pot types 40, 236.<sup>3</sup>  
Pottery and beads indecisive.

ED III PG 15: Seal, U.7657.  
Seal no. 101<sup>3</sup> depicts a typical E.D. III banqueting scene.

ED III PG 31: Beads, U.7987; Seals, U.7985-6; Pot types 4, 108 and 150.  
U.7985, seal no. 99, depicts a typical ED III

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(1) Chapter II, pp. 77-78.

(2) Chapter II, p. 47.

(3) The grave contents were assembled from the Tabular analysis, UE II, pp. 412-509, and the catalogue, UE II pp. 524-595. The seal numbers refer to Legrain's seal catalogue, U.E. II, pp. 335-365.

banqueting scene. Second seal not illustrated. Beads not catalogued.

P.A.<sup>1</sup> PG 35: Beads, U.7962; Seals, U.7953-7; Pot 45. Buchanan<sup>2</sup> dated to Post Akkadian. Seal U.7953, no. 178, U.7954, no. 187, U.7955, no. 156, U.7956, no. 188 and U.7957, no. 369.

Beads, U.7962 and U.7963, consist of necklaces of small beads of lapis lazuli, carnelian and gold and gold-plated copper ball beads. The last, gold-plated copper beads, are a feature of late graves.

P.I. PG 36: Beads, U.7944; Pots 5, 16.

Pot type 16 is a hall-mark of the Proto-Imperial or Late ED III period. Beads consist of lapis, carnelian and silver.

ED III PG 37: Beads, U.8084, U.8089; Seal, U.8085.

Seal no. 34 depicts an ED III banqueting scene. Lapis beads in the form of double conoids and faceted dates.

ED-PI PG 55: Beads, U.8002, U.8004, U.8008, U.8011-2, U.8018; Seal, U.8006.

Seal no. 107 is poorly cut but shows an E.D. III drinking scene. Beads of gold, carnelian and lapis

(1) Abbreviations used include P.I. for "Proto-Imperial" or Late ED III; ED-PI for "Early Dynastic III to Proto-Imperial"; Akk. for "Akkadian"; P.A. for "Post-Akkadian"; and A-PA for "Akkadian to Post-Akkadian".

(2) See Chapter II, pp. 73-74; and B. Buchanan, "The Date of the So-Called 'Second Dynasty' Graves of the Royal Cemetery at Ur", J.A.O.S. 74, pp. 147-153.

including some very small balls. U.8018 consists of agate bugles. Very small beads sometimes indicate a later date, as do the agate bugle beads.

ED III PG 69: Beads, U.8054; Seal, U.8056; Pots 59, 108, 173-4.

Seal no. 49, in bad condition, is ED III. Beads of lapis and carnelian. Pottery indecisive.

ED-PI PG 71: Beads, U.8044; Pots 103, 108, 145, 149.

Pot 149 occurs in PG 91 in association with type 243, the typical ED III fruitstand, which in the Diyala continues in use in P.I., and at Kish in Akkadian times. Beads are frit, lapis, carnelian and shell. Date of grave may be ED III or later.

ED III PG 76: Beads, U.8101; Pots 109, 128.

Pot 109 is an ED III type. Beads of lapis lazuli.

ED III PG 88: Beads, U.7945; Pots 5, 101, 108, 149.

Pot 101 is an ED III type. Beads of lapis and carnelian.

? PG 89: Beads, U.8050; Pots 61, 100, 108, 187.

Pot 61 is ED-P.I. type, but 187 occurs in Akkadian graves. Beads of lapis and silver.

ED-PI PG 91: Beads, U.8070, 8159; Pots 149, 181, 243.

Pot 243 is the ED III fruitstand, continuing in use to Akkadian times. Beads of lapis lazuli.

? PG 114: Beads, U.8110; Pots 99, 108.

Pottery indecisive. Beads, only 2 lapis conoids.

ED III PG 121: Beads, U.8178; Pots 1, 149.

Pot 1 is an ED III type: 149 is associated with 243 in PG 91. Beads of lapis and gold, part of a brim, a typical Royal Cemetery ornament.

P.A. PG 125: Beads, U.8164; Pot 110.

Pot 110 occurs in P.A. graves. Beads are of lapis, carnelian and silver in the form of double conoids and treble ball beads - also imitation shells. Complicated beads support P.A. date given by pot.

P.A. PG 143: Beads, U.8201; Seal, U.8202.

Buchanan dates to P.A., although seal is not illustrated (JAOS 74, p. 151, note 28). Beads, small rings of silver, lapis lazuli, carnelian and glazed frit.

? PG 151: Beads, U.8177; Pots 63, 108, 130.

Pottery indecisive. Beads of lapis, carnelian and a bleached carnelian bead.

ED III PG 153: Beads, U.8168, 8172; Seal, U.8169.

Seal no. 133 is probably Elamite, contemporary with the Jendat Nasr period. Gold, carnelian and lapis rectangular and disc beads.

ED III PG 156: Beads, U.8116-7; Seal, U.8119; Pots 108, 180.  
Seal no. 26 depicts an ED III banqueting scene. Gold, lapis and carnelian double conoids, dates and ball beads. Also one large Agate double conoid.

? PG 158: Beads, U.8127; Pot 108.  
Beads are gold and lapis double conoids. Pot indecisive.

ED III PG 159: Beads, U.8210-2; Pots 5, 61.  
Pot 61 is of ED-PI date. Beads, lapis ball chaplet and silver 'comb', a typical R.C. ornament. Lapis and carnelian necklaces.

ED III PG 165: Beads, U.8226, 8229; Seal, U.8228; Pot, 1.  
Seal no. 47 is an ED II contest scene. On account of this Crawford (thesis p. 49) says grave could possibly be ED II, although she believes cemetery does not begin until ED III. Pot 1 is an ED II-III type. Lapis, carnelian and gold double conoids. Lapis and silver pin.

ED III PG 169: Beads, U.8250; Pots 5, 63, 108.  
Pot 63 is an ED III type. Beads of lapis and shell.

ED-PI PG 176: Beads, U.8137; Pots 67, 92.  
Pot 67 is P.I., while 92 is ED III. Beads, 90 lapis double conoids, balls and dates.

Akk. PG 184: Beads. U.8267?; Pots 145, 187.  
Pot 187 occurs in Akk. graves, but beads may not belong. Beads of lapis, carnelian and silver.

Akk. PG 202: Beads, U.8409; Seal, U.8410; Pots 5, 40, 99, 108, 145, 149.

Seal is not illustrated but Buchanan dates it to Early Akkadian (JAOS 74, p. 152, note 33). Only eleven beads of lapis, carnelian and gold.

ED III PG 208: Beads, U.8403; Pots 7, 108, 209.

Pottery ED III. Beads, balls of lapis and carnelian rings.

ED III PG 209: Seal U.8339; Pot 108.

Seal no. 202 is geometric design of Jemdat Nasr type.

Akk. PG 219: Beads U.8364; Seal U.8359; Pots 5, 83, 100, 108, 145.

Seal no. 166 is dated by Amiet to the First Dynasty but Crawford points out (thesis p. 51) that this grave includes Axe Type S.6, a hammered axe form which was only introduced in Late Akkadian times. Pot 83 occurs from P.I. to Ur III. Beads are of lapis and carnelian. The tomb is built on top of a ruined floor made of plano-convex bricks. The date is therefore probably Late Akkadian.

ED III PG 221: Beads, U.8368, 8375-7; Seal U.8367; Pot 61.

Seal no. 138 is a typical ED III banqueting scene. Pot 61 occurs in ED-PI graves. Carnelian, lapis and silver wreath and necklace of R.C. type. Seated bull amulet of lapis.

ED III PG 226: Beads, U.8421; Seal U.8420.

Seal 203 shows a geometric Jemdat Nasr design, often found in ED III graves. Beads of lapis and carnelian.

ED III PG 227: Beads, U.8391; Seals U.8388-9; Pots 108, 130, 150.

Seal U.8388, no. 6, is probably ED III, cf. CANES I, nos. 100, 105E and 108; Seal U.8389, no. 48, shows an ED III contest scene. Pot 150 occurs with the fruitstand 243 in PG 237. Lapis and carnelian beads.

ED III PG 237. Beads U8400; Pots 5, 108, 150, 243.

Pot 243 is the ED III fruitstand. 14 lapis and carnelian beads.

ED III PG 249: Beads U.8439; Pots 5, 7, 108, 109.

Pots 7 and 109 occur in ED III graves. Beads of silver, lapis and carnelian.

? PG 263: Beads U.8525-7; Seal U.8529.

Seal not illustrated. Beads of gold, carnelian and lapis. U.8527 is a 'dog collar' similar to those of R.C. but is made of minute gold beads soldered into a triangle and minute lapis and carnelian beads strung in alternating rows (see Plate 16) of diminishing number to form a stone triangle. Minute beads tend to be a feature of late graves. It may be that this necklace belongs to the archaizing Ur III period. For similar piece see PG 1629.

ED III PG 286: Beads U.8446; Pots 108, 150.

Pot 150 occurs in ED III grave, see PG 227. Beads of lapis, carnelian and gold.

Akk. PG 288: Beads, U.8465; Seal U. 8464

Seal no. 158 shows an Akkadian contest scene. Beads of lapis and carnelian.

ED III PG 313: Beads, U.8569, 8571; Seal, U.8575.

Seal no. 42 is thought by Amiet (Pl. 80) to be an earlier style, which also occurs in ED. Gold, lapis and carnelian beads. Some of these are squares with a spiral pattern worked on them (UE II, Pl. 134).

? PG 314: Beads U.8702; Seal US701.

Seal not illustrated. Lapis and silver beads.

Akk. PG 319: Beads U.8572; Pot 145.

Pot 145 occurs in two graves, dated to the Akkadian period, see f. PG 184 and 202. Beads of carnelian, lapis and gold.

P.A. PG 323: Beads U.8585; Seal U8584; Pot 44.

Buchanan dates seal no. 134 to P.A. period. Beads are of carnelian, lapis and gold in varied forms, small balls, flat discs, large double conoids and diamonds.

ED III PG 333: Beads U.8602-3; Pots 5, 61, 101, 108, 109, 243.

Pottery ED III. Beads very small lapis balls and gold, carnelian and lapis double conoids.

ED III PG 337: A Royal Tomb: Beads U.8614, 8621; Seal U.8615;  
Pots 4, 5, 6, 61, 92, 101, 108, 244?

Seal no. 27 is a finely cut banqueting scene of ED III date. Beads, gold squares, lapis diamonds and double conoids. Silver.

? PG 338: Beads U.8738; Pot 65.

Pottery indecisive. A single lapis bead.

P.A. PG 345: Seal U8965.

Buchanan dates seal no. 253 to Post-Akkadian.

ED III PG 356: Beads U.8707; Pot 243.

Pot 243 is ED III fruitstand. Beads, 1 ribbed gold and 236 lapis - mostly small.

ED III PG 357: Beads U.8644; Seal U.8643; Pots 5, 108.

Seal no. 38 is an ED III seal, showing a banquet in the upper register and a contest scene in the lower. Beads of lapis, silver and carnelian.

P.I. PG 362: Beads, U.8716; Seal U.8714; Pot 243.

Seal no. 8 is a late ED III contest frieze, cf. CANES I, nos. 93-4. Pot 243 is ED III and later fruitstand. Beads of lapis.

Akk. PG 369: Pots 108 and 187.

Pot 187 occurs in Akk. graves. Lapis spindle wheel in grave, not catalogued.

ED III PG 381: Beads U.8657; Seal U.8656.

Seal no. 139 is a typical ED III seal depicting in two registers a frieze of eagles and a banqueting scene.

Beads of lapis, carnelian and gold, the usual trio.

PI-Akk. PG 383: Beads U.8647; Seal U.8646; Pots 207 and 243.

Seal no. 164 is a late contest frieze, may be Early Akkadian, cf. CANES I, nos. 131-6. Pot 243 is the fruitstand. Lapis and carnelian beads.

? PG 389: Beads U.8687, 8689; Pot 108.

Pottery indecisive. Beads of usual trio.

Akk. PG 395: Beads U.8667; Seal U.8666; Pots 45, 162.

Buchanan dates seal no. 181 to Middle Akkadian period. Beads consist of small lapis and carnelian, one chalcedony, one silver disc and 2 or 3 ball beads of gold-plated copper, a late feature.

P.A. PG 397: Beads U8669-70; Seal U8668; Pots 76, 108, 162.

Buchanan dates seal no. 136 to P.A. Pot 76 has Diyala parallel of Larsa/Old Bab. date. Beads a medley of carnelian, lapis, copper, crystal, gold-plated copper, agate with gold caps.

ED III PG 420: Beads U8775; Pot 67, 81, 108, 203, 208, 243.

Pottery ED III. Beads, 83 lapis lazuli balls.

PI-Akk. PG 473: Beads U.9018; Seal U.9028; Pot 67.

Seal no. 154 may be Early Akk., see CANES I, no. 139.

Pot 67 is a P.I. type. Beads of lapis, carnelian and two copper balls.

Akk. PG 482: Beads U.9244; Seal U.9242; Pots 149, 150.  
Seal no. 162 possibly Akk., see CANES I, no. 133. Beads include lapis and gold double concoids, lapis, carnelian and two banded sard cylinders.

? PG 533: Beads U.9124; Pot 107.  
Pottery indecisive. Beads of lapis and silver.

Akk. PG 535: Beads U.9165A; Seal U9165B.  
Buchanan dates seal no. 271 to Middle Akk. Assorted beads of lapis and carnelian.

Akk. PG 543: Beads U.9142-4; Seals U.9145, 9149-50, 9153.  
Buchanan dates U.9145, no. 183, to Middle Akk. Seal U.9150, no. 175, is also Akk, see CANES I, nos. 131-3. Seals U.9149 and U.9153 are not illustrated. Beads include flat diamonds of lapis and gold-plated copper; small dates of lapis, carnelian and gold-plated copper; very small beads of lapis and carnelian with pendant of false cats' eye made from haematite and shell.

Akk. PG 544: Beads U.9089; Seals U.9082-3.  
Buchanan dates seals nos. 167 and 176 respectively to Early Akk. Amiet claims one seal is First Dynasty. The 85 beads consist of silver and lapis lozenges; barrels and double concoids of lapis and carnelian; 1 banded sard and 2 carnelian cylinders.

Akk. PG 549: Seal U.9183.

Buchanan dates seal no. 182 to Middle Akk.

Akk. PG 559: Beads U.9279-81: Seals U.9282-3; Pots 108, 173 and 187.

Buchanan dates seal U.9282, no. 189, to Late Agade, Seal U.9283, no. 172, is also Akk. Beads are of lapis, gold, silver and carnelian in very small balls and double concoids. Lapis dates with gold caps and gold wire wrapped spirally round.

Akk. PG 563A: Beads U.9309; Seal U.9310.

Buchanan dates seal no. 200 to Middle Akk. Beads of gold, lapis and carnelian - a crescent of gold-capped agate in centre.

ED III PG 580: A Royal Tomb: Beads U.9351, 9656, 9779; Seals U.9315, 9341; Pots 16 and 186.

Delougaz claims Pot type 16 does not occur before the Proto-Imperial period and this would necessitate the dating of this royal tomb, which is richly equipped with gold objects, including the famous gold dagger with lapis lazuli hilt (U.9361) to the Proto-Imperial period. We cannot, however, be certain that Pot 16 belonged to the grave for Woolley has recorded that it was "from the point of view of scientific excavation the least satisfactory of all the royal tombs. ... No tomb chamber was found..." (U.E. II, p. 46) In view of the above it seems most probable that Pot 16

was not one of the tomb gifts and that PG 580 belongs, as do the other royal tombs, to the main ED III period. Seal U.9315 (no. 98) is a typical ED III b scene, which belonged to the priestess of the divine Gilgamesh. The other seal is not illustrated. Beads include familiar R.C. types, such as the wreath, dog-collar, many lapis, carnelian and gold beads of all types, one bleached carnelian bead, a double concoid bead embellished with filigree etc.

Akk. PG 655: Beads U.9650; Pots 5, 45, 108, 132.  
Pot 132 occurs in Akk. graves. Lapis double concoids and dates.

? PG 662: Beads U.9596; Pots 21, 45, 100.  
Pottery indecisive. Beads of lapis and carnelian.

Akk. PG 681: Beads U.9719; Seal U.9721; Pots 5, 45, 100.  
Buchanan dates seal no. 192 to Middle Akk. Beads, minute lapis and gold double concoids and carnelian barrels.

Akk. PG 686: Beads U.9623; Seal U.9620.  
Buchanan dates seal no. 272 to Middle Akk. Beads include double concoids and balls of gold-plated copper, silver, lapis and carnelian of various forms, including minute rings; also one agate, one jasper and one shell bead.

- P.A. PG 689: Beads U.9683; Seals U.9679, 9681; Pots 5, 45, 100, 127, 174, 214.  
Buchanan dates seal no. 190, U.9681, to Post-Akk. - the other, no. 180, is Akk. in style. Beads of lapis and silver diamonds and discs.
- Akk. PG 697: Beads U.9767; Seals U.9764-5; Pots 132, 163.  
Buchanan dates seal no. 177, U.9765, to Middle Akk., the other, no. 169, is also Akk. in style. Beads include gold, silver and agate.
- Akk. PG 717: Beads U.9825, 9834, 9838; Seal U.9829.  
Buchanan dates seal no. 191 to Middle Akk. Gold, lapis, carnelian, crystal, gold-capped agate beads. 1 lapis cylinder decorated incisions.
- Akk. PG 724: Beads U.9735; Seal U.9740; Pots, 5, 78, 100, 148.  
Buchanan dates seal no. 170 to Early Akk. Beads of lapis, silver, and glazed frit.
- akk. PG 726: Beads U.9805; Seal U.9808.  
Buchanan dates seal no. 173 as Middle Akk. Beads of usual trio plus one agate.
- ED III PG 755: Tomb of Mes-kalam-dug: Beads U.10006-11, 10026; Seal U.10011. Pot 67.  
Seal decayed. Typical ED III jewellery consisting of graded gold and lapis double conoids, dog collar, lapis amulets of frogs, ram, gold monkey, lapis whetstone (U.10015), wreaths of silver, lapis and carnelian;

necklaces of gold, lapis and carnelian. Gold helmet.

ED III PG 760: Beads U.11230; Pots 95, 100, 208.

Pot 95 has Diyala parallels dating from ED II to Early Akk. Jewellery of R.C. type, including wreaths, combs, dog-collars, etc., of the usual trio and silver.

ED III PG 777: Royal Tomb: Beads U.9782-7, 9960, 9965; Pots 5, 7, 18, 21, 61, 63, 108, 208.

Beads of familiar R.C. type including wreaths, combs and brins made from the usual trio.

ED III PG 779: Royal Tomb: Beads U.11153, 11157, 11165; Seals U.11159, 11174-6, 11175b, 11178; Pots 5, 104, 105.

Seals, as expected, of ED III type. U.11174, no. 64, and U.11175b, no. 62, depict contest scenes; U.11178, no. 61, shows heraldic bulls and intertwined snakes, the latter dated by Frankfort to ED III (Cylinder Seals, Pl. XIV i). The other seals are decayed. Jewellery, thousands of small lapis beads and some gold.

ED III PG 780: Beads U.10172; Seal U.10168; Pots 108, 174.

Seal no. 159 is poorly preserved, but probably ED III in date, see B.M. Catalogue, p. 20, Pl. 16 g. Beads, a bracelet of lapis and carnelian.

ED III PG 789: Royal Tomb - The King's Grave  
Beads: U.10550, 10563-4, 10579-80, 10582, 10584, 10586-94, 10596-9, 10751-2, 10800-16, 10819-24, 10829-34, 12056-7; Seals U.10804, 10822 and 10823; Pots 1, 90, and 223.

A very rich Royal Tomb, containing multiple burials.

As is to be expected, seals are of ED III type: U.10822,

no. 36, and U.10823, no. 29, depict banqueting scenes. Jewellery covers the normal Royal Cemetery repertoire: reins of lapis and silver, brims, many forms of beads of lapis, silver, gold, carnelian and shell: combs, wreaths, dog-collars, etc. Some beads of glazed frit.

ED-Akk. PG 792: Beads U.10150; Seals U.10153; Pot 54.

Seal no. 165 is a contest frieze of ED III to Akk. date. A necklace is made of carnelian, lapis and a single steatite bead.

Akk. PG 796: Seals U.10302-3; Pots 45, 88.

Buchanan dates U.10302, no. 247, to the Middle Akk. period. The second seal, no. 160, is also Akk., see CAHES I, nos. 132, 134-5.

ED III PG 800: Royal Tomb - Queen Pu'abi or Shub'ad  
Seals U.10448, 10530, 10871-2, 10939; Pots 4, 5, 6, 7, 45, 59, 61, 88, 100, 101, 203, 223, 243.

A burial of unparalleled richness - beads of the Queen and her numerous attendants too many to list.

Seals nos. 19, 63, 17, 18 and 16 respectively are all of ED III style. No. 19 is inscribed with the name of A-bar-gi and no. 16 with that of the Queen herself. Some of the most important jewellery included the usual Royal Cemetery equipment of wreaths, gold fillets, earrings, brims, combs, dog-collars and necklaces made from the familiar combination of gold or silver, lapis lazuli and carnelian carved in a great variety of shapes

from very small balls to large dates. Many amulets of gold and lapis. One chain to hang an amulet, a lapis calf, consisted of lapis and agate beads, U.10947. The rich diadem of the Queen is shown in UE II, Pls. 140-1. Large agate beads and lapis balls form part of the decoration of the Queen's cloak, U.10977, UE II, Pl.131. Woolley points out that Queen Pu'abi is one of the very few in the Early Dynastic cemetery to use a material other than lapis, carnelian and gold or silver, namely agate (U.E. II, p. 369). Her tomb contains much inlay mosaic work.

Akk. PG 822: Beads U.10313, 10315, 10316; Seal U.10323; Pots 60, 132.

Seal no. 13 is indistinct but may be Akk or Post-Akk.

Pot 132 occurs in Akk. graves. Beads include a bracelet of lapis and silver; minute gold, lapis and silver balls; lapis and carnelian cylinders and a unique gold and lapis ear-ring (U.E. II, Pl. 138).

P.A. PG 840: Beads U.10721-2; Seal U.10727; Pot 41.

Seal decayed. Pot 41 occurs in Post-Akk. graves - Diyala parallel dates to Late Akk. Beads of lapis, silver and an agate pendant.

? PG 360: Beads U.10737; Pot 5.

Pottery indecisive. Beads, glazed frit and lapis lazuli.

Akk. PG 861: Beads U.11115; Seals U.11107, 11110, 11112;  
Pots 4, 100, 117, 142.

Buchanan dates seal U.11107, no. 76, to Middle Akk.

The others, nos. 1 and 73 respectively, show a typical  
Jemdat Nasr geometric design and an Akk. contest scene.

P.A. PG 867: Beads U.10762; Seals U.10764-6 A and B.

Buchanan dates U.10766B, no. 197, to Post-Akk. Nos.

145, 168 show Akk. "connected groups", CANES I, Pl. XXI;

U.10766A, no. 157 is an ED III contest frieze. Beads  
consist of two strings of lapis, carnelian and gold.

ED III PG 895: Beads U.10705; Seal U.10708; Pot 243.

Seal no. 75 shows an ED III contest scene. Pot 243 is

the fruitstand. Crawford records an elaborate 'granny  
pot' handle, making the grave late ED III (thesis, p.49).

Beads are silver, lapis, carnelian and steatite diamonds.

ED III PG 1027: Beads U.11489; Seals U.11488.

Seal no. 129 shows a geometric design common to Jemdat

Nasr times. Beads are small balls of lapis lazuli.

? PG 1038: Beads U.11485; Pot 108.

Pottery indecisive. Beads, lapis and carnelian balls  
and dates: one shell cylinder.

ED III PG 1043: Beads U.11501; Seal U.11499; Pots 5, 7, 100.

Seal no. 161 shows an ED III contest scene. Pot 7 occurs  
in ED III graves. Small beads of silver, lapis lazuli  
and carnelian.

ED III PG 1050: Royal Tomb: Beads U.12063-78; Seals U.11825, 12063; Pots 5, 7, 23, 100, 102, 108, 173, 179, 209, 215, 231.

Seal U.11825, no. 65, is inscribed a-kalam-dug and shows a typical ED III contest frieze. The other seal is decayed. Beads are lapis and silver double conoids, dates ovoids, rectangles and one steatite lozenge.

ED III PG 1054: Royal Tomb: Beads U.11742, 11744; Seals U.11528, 11734, 11751, 11904; Pots 5, 6, 62, 68, 69, 106, 108, 148, 154, 169, 174, 193, 208, 243.

Seals U.11528 and U.11751 are decayed although an inscription on the latter was still readable and gave the name Mes-kalam-dug. Seal U.11734, no. 12, shows animals in wooded mountains and is dated by Frankfort (Cylinder Seals, Pl. XIII h) to ED III; Seal U.11904, no. 21, also shows an ED III scene. Beads include a wreath and necklace of the familiar trio of materials.

ED III PG 1061: Beads U.11522; Pots 5, 108, 174.

Lapis and gold double conoids from an R.C. brim.

ED III PG 1068: Beads U.11559-60, 11562-3; Seal U.11554.

Seal no. 69 is dated by Frankfort (ibid, Pl. XIII g) to ED III. Beads include familiar R.C. wreath, but also include a mixed necklace of carnelian, gold, lapis and Agate, usually an indication of a later date.

Alt. PG 1070: Beads U.11531; Pot 47.

Pot 47 only occurs in this single grave. It is closely comparable with Diyala C.546.640 on Pl. 183, OIP LXIII,

from Tell Asmar, which occurs in levels dated P.I. to Akk. The Diyala vessel lacks the knob on the base of the Ur example. Beads are of carnelian, lapis and chrysoprase.

ED III PG 1088: Beads U.11702; Pots 5 and 143.

Pot 143 occurs in ED III graves. Beads of lapis and carnelian.

ED III PG 1111: Beads U.11710; Pot 186.

Pot 186 is ED III. Beads are lapis double conoids.

ED III PG 1130: Beads U.11769, 11779-80; Seals U.11773-4; Pots 100, 108, 174.

seals nos. 35 and 28 respectively depict typical ED III banquet and contest scenes. Beads are a dog-collar, and belts of gold and lapis: mixed beads of the usual trio.

ED III PG 1133: Beads U.11807; Pot 5, 148, 150, 209.

ED III pottery. Beads are dates of usual trio.

ED III PG 1136: Seal U.11828; Pot 150.

Seal no. 106 is coarsely cut and is probably ED III.

ED III PG 1151: Beads U.11878; Pots 5, 101, 108, 143.

ED III pottery. Beads include brim of usual trio.

? PG 1156: Beads U.11855-6; Pot 71.

Pot 71 occurs only in this instance. Beads of usual trio.

Akk-PA PG 1163: Beads U.11873; Seal U.11871.

Seal no. 15 is poorly cut but the method of rendering the head and particularly the eyes suggests an Akk. or even a Post-Akk. date. Only 3 beads, carnelian, lapis and wood.

P.I. ? PG 1170: Beads U.11894; Pots 108, 243.

Pot 243 is the fruitstand. Beads are mixed types of carnelian, lapis and jasper, which suggests a post-B.D. date.

? PG 1172: Beads U.11900; Seal U.11899; Pots 5, 49, 108.

Seal no. 78 is the geometric design familiar in Jemdat Nasr times. The beads are small carnelian dates and lapis balls. Pot 49 occurs in both PI and PA contexts.

Akk. PG 1173: Seals U.11896-7.

Buchanan dates seals 225 and 217 to Early Akkadian.

? PG 1178: Seal U.11938; Pots 5, 100.

Seal 71 is sketchily rendered and hard to date.

? PG 1180: Beads U.11930; Pots 5, 45.

Pottery indecisive. Beads of silver and lapis in the shape of double conoids.

BD III PG 1195: Beads U.11962, 11964, 11966; Pot 150.

Jewellery includes two brims of gold, silver, lapis and carnelian and a lapis amulet of a fish.

? PG 1196: Beads U.11971; Seal U.11970.

Seal decayed: beads, silver and lapis double concoids and dates.

ED III PG 1197: Seal U.11973.

Seal no. 130 is in the geometric Jemdat Nasr style, which often occurs in E.D. III graves.

ED-PI PG 1216: Beads U.12012; Seal U.12011; Pot 243.

Seal no. 135 is much worn and probably ED III. Pot 243 is the fruitstand. Small lapis and carnelian beads.

ED III PG 1219: Beads U.12006; Pots 100, 110 and 143.

Pottery ED III. Beads - small lapis balls.

ED III PG 1232: Death Pit: Beads U.12257; Pots 5, 108, 173.

A poor death pit. Beads of silver and lapis for reins.

ED III PG 1234: Beads U.12046-8; Pot 223.

Pot 223 occurs in ED III graves. Lapis, gold, silver and carnelian beads in necklaces and bracelets. Dog-collar of gold and lapis.

ED III PG 1236: Royal Tomb: Beads U.12444, 12452, 12454-6, U.12458, 12460; Seals U.12330, 12448, 12461; Pots 5, 7, 18, 61, 105, 106, 211.

Seals nos. 32, 43 and 54 are all of ED III type.

Beads of the usual materials and forms.

ED III PG 1237: The Great Death Pit

Beads U.12359-12429; Seals U.12371, 12374, 12380, 12387, 12390, 12413, 12427; Pots 5, 108, 143.

Seals nos. 40, 22, 39, 23, one decayed, 72 and 14 respectively are all, as is to be expected, of ED III type. The beads are extremely numerous coming from a large number of bodies and include all the familiar R.C. types: dog-collars, wreaths, combs, etc., worked in gold, silver, lapis lazuli, carnelian and shell.

? PG 1247: Beads U.12111; Pot 5.

Pottery indecisive. Beads of carnelian and lapis.

ED III PG 1270: Beads U.12169, 12255; Pots 5, 108, 143, 150.

Pottery ED III. Beads of lapis, carnelian and two fluted barrels of faience.

Akk. PG 1276: Beads U.12154; Seals U.12157-8; Pots 108, 147 and 194.

Buchanan dates U.12158, no. 147, to the Early Akkad period. The other, no. 163, is also Akk. Necklaces of lapis rings and diamonds: agate dates, gold, lapis and carnelian balls.

ED III PG 1299: Beads U.12221; Pot 143.

Pot 143 occurs in ED III burials. Beads are a brim, a typical R.C. ornament, of gold and lapis.

ED III PG 1304: Beads U.12237; Pots 5, 144, 243.

243 is the fruitstand. Beads of carnelian and lapis.

ED III PG 1312: Beads U.12256; Seal U.12256; Pots 5, 102, 108 and 243.

Seal no. 33 is a typical ED III banqueting scene (above) and contest frieze (below). Pots include familiar ED wares, eg. the fruitstand. Beads are the usual Royal Cemetery wreaths, brims, etc. of the usual trio of gold, lapis and carnelian. There is also one jasper cylinder.

ED III PG 1315: Beads U.12258; Seal U.12258; Pot 11.

Seal no. 30 shows an ED III banqueting scene. Jewellery of gold, lapis and carnelian, includes dog-collar, wreath and comb, as well as a few agate cylinders.

Akk. PG 1318: Beads U.12266; Pot 141.

141 occurs in Akk. burials. Beads of silver, lapis and carnelian.

ED III PG 1322: Beads U.12297; Seal U.12296; Pots 5, 108, 208.

Seal no. 149 is the usual ED III contest frieze. Pot 208 occurs in the Diyala in contexts ranging from ED II to Early Akk. Beads of silver and lapis.

Akk.? PG 1327: Beads U.12303-4; Pots 5 and 147.

Pot 147 occurs in Akk. graves. Carnelian, silver and lapis beads, including some from a brim. Brims are a feature of ED III - this one must be a survival.

ED III PG 1332: Death Pit: Beads U.12433; Seal U.12433.

Seal 31 shows an ED III banquet. Numerous and varied beads of lapis and silver.

Akk. - PG 1351: Beads U.12622; Pots 76, 138.  
F.A.

Pot 76 occurs in the Diyala in contexts dated to Larsa/  
Old Bab.: at Ur it was found in Akk. and Post-Akk.  
graves. Beads of silver, lapis, carnelian and chal-  
cedony.

? PG 1360: Beads U.12635; Pots 5, 83, 108, 125.

Pot 83 occurs from P.I. to P.A. times. Beads of lapis  
silver and carnelian.

? PG 1374: Beads U.12647; Seals U.12654, 12658; Pots  
5, 100, 108, 129.

Seal U.12654, no. 70, is ED III, while the other, no. 2  
shows the Jemdat Nasr geometric style. Pot 129 occurs  
in Akk. graves. Beads of gold and lapis, long double  
concoids.

ED III PG 1382: Seals U.12674-5; Pot 108.

Seal no. 67, U.12674, shows a frieze of fighting animals  
of ED III date - the other, no. 3, bears a geometric  
design.

ED III PG 1385: Beads U.12678; Seal U.12678.

Seal no. 143 belongs to the later style of the ED III  
contest frieze. Copper pins with lapis ball and cube  
heads.

ED III PG 1387: Beads U.12680; Seal U.12680.

Seal no. 146 is an ED III contest scene. Three car-  
nelian and lapis beads.

ED III PG 1391: Beads U.12693; Pots 100, 243.

Fruitstand 243. Carnelian and lapis ball beads.

Akk. PG 1398: Beads U.12696; Pot 197.

Pot 197 occurs at Ur in Akk. graves: in the Diyala from Proto-Imperial to Late Agade. Silver and lapis beads.

Akk. PG 1400: Beads U.12701; Seals U.12701 E and F; Pots 5 and 108.

Both seals illustrate fighting groups: U.12701 E is probably Early Akkadian, while the other<sup>279A</sup>/is transitional. Jewellery of gold, lapis and carnelian.

ED III PG 1403: Beads U.12704; Seals U.12704 F and G.

Seal no. 7 is engraved with an ED II style scene, while no. 68 shows an ED III contest scene. The beads, in addition to the usual three materials, include two calcite beads.

ED-Akk. PG 1404: Beads U.12705; Seal U.12705.

Seal no. 280, much decayed, probably ED III to Akk. Lapis and carnelian beads.

Akk. PG 1405: Beads U.12706; Seal U.12706.

Seal no. 218 shows an Akk. contesting group, see CANES I, nos. 131-2. Beads of lapis, carnelian, silver, chalcedony and calcite.

ED III PG 1407: Beads U.12707; Seal U.12707; Pots 5, 108.

Seals nos. 46 and 66 are both late ED III in style.

Beads of carnelian and lapis, forming brim. H. Crawford suggests this tomb could be ED II (thesis, p. 49) but seal dating disproves this.

ED III PG 1412: Beads U.12711; Seal U.12711; Pot 100.

Seal no 5 shows in two registers a frieze of running ibex, Jemdat Nasr in style. Carnelian, lapis and silver beads.

ED III PG 1421: Beads U.12728-32; Pot 5.

Royal Cemetery type of jewellery, including dog-collar.

? PG 1524: Beads U.14073; Pots 5, 67, 81, 108, 136, 150.

Pot 67 occurs in P.I., and Pot 81 in P.A. contexts.

Beads of lapis, carnelian and a rock crystal drop pendant.

? ED - PG 1556: Beads U.13558: Pots 5, 83, 108, 208 and 243.  
P.I. ?

Pottery mainly of ED III to P.I. date. Pot 83 starts at Ur in P.I. levels, but continues to P.A., while in the Diyala it is dated J.N. to P.I. Beads of lapis double conoids and carnelian rings.

? P.I. PG 1563: Beads U.13556; Pot 61.

Pot 61 is E.D. to P.I. type. Diyala parallel dated to Larsa period. Beads, steatite, lapis, carnelian and calcite.

? P.I. PG 1588: Beads U.13594; Pot 243.

The fruitstand begins in ED III. Beads are one gold, one lapis and one sard barrel.

ED III PG 1603: Beads U.14007; Pots 92 and 243.

ED III pottery. Beads of lapis and carnelian.

ED III PG 1618: Beads U.13793-7, 14405; Pots 5 and 61.

Pot 61, ED to P.I. Beads, bring and lapis conoids.

? PG 1619: Beads U.14075; Pots 5, 108.

Pottery indecisive. Lapis and silver beads.

ED III PG 1625: Beads U.14036; Seal U.14041; Pot 243.

Seal no. 37 is a classical ED III banquet scene.

Beads of gold and lapis.

? PG 1629: Beads U.14026; Pots 5, 7, 108, 147 and 153.

Beads are in the form of a bracelet made of triangles of soldered gold beads and minute rings of lapis and carnelian, see PG 871 for similar piece. Pot 147 occurs in Akk., while Pot 7 is an E.D. to P.I. type.

ED III PG 1636: Beads U.14056; Pot 243.

Fruitstand. Beads of lapis and carnelian.

Akk. PG 1646: Beads U.14086; Seal U.14087.

Seal no. 41 is claimed by H. Crawford to be Akk. Also in tomb is a hammered axe, Type S. 19, of late Sargonid date (Crawford, thesis, p. 53). Two large lapis conoids.

- ED III PG 1648: Royal Tomb: Beads U.13783-4; Pots 5, 61, 106, 108, 208.  
Pottery E.D. to P.I. Beads of gold and lapis, double conoids: Brim of gold, lapis and carnelian.
- P.I. PG 1650: Beads U.14088; Seal U.14090; Pot 16.  
Pot 16 is Delougaz' hallmark of "Proto-Imperial".  
Seal no. 124 has a Jemdat Nasr geometric design.  
Beads, burnt lapis ovoids.
- P.A. PG 1651: Beads U.14096; Pot 110.  
110 occurs in P.A. graves. Beads of carnelian and lapis.
- ? PG 1665: Beads, U.14215; Seal U.14216; Pots 5, 7, 83, 100, 129, 136.  
Seal no. 128 carried a Jemdat Nasr geometric design.  
Pot 7 is ED to P.I. while Pot 83 is P.I. to Akk and Post-Akk.; Pot 129 occurs in Akk. graves. Beads of carnelian and lapis.
- ? PG 1685: Beads U.14233; Pot 5.  
Pottery indecisive. Only 2 faceted conoids of lapis.
- ? PG 1698: Beads U.14256; Pots 5, 108.  
Pottery indecisive. Two faceted conoids of lapis and two carnelian rings.
- ED III PG 1749: Beads U.14475, 14479-80, 14482; Seal U.14473A.  
Seal no. 102 shows an ED III banquet scene. Beads include typical R.C. dog-collar, wreath and necklaces of gold, lapis and carnelian.

ED III PG 1750: Beads U.14316-7; Seal U.14319.

Seal no. 20 depicts an ED III banquet scene. Beads include a brim and a lapis necklace.

? PG 1751: Beads U.14321; Pot 106.

Pottery indecisive. Only two lapis date beads.

The "Second Dynasty" Cemetery

Akk. PG 695: Seals U.9693-4; Pots 5, 45 and 201.

Buchanan dates seals nos. 310 and 357 to the Middle Akk. period. They illustrate contest and mythological scenes.

Akk. PG 735: Beads U.9930; Seal U.9923; Pots 5, 44, 76 and 197.

Buchanan dates seal no. 185, which shows a contest scene, to the Late Akkadian era. Beads are very small rings of lapis, paste and silver.

Akk. PG 871: Beads U.10753; Seal U.10757; Pots 21, 45.

Buchanan dates seal no. 291, which shows a presentation scene, to the Late Akkadian period. Beads, a necklace of three tiers of minute gold and lapis barrels, gold, lapis and carnelian double conoids.

ED to Akk. PG 1420: Seal U.12720; Pots 5, 108.

Buchanan suggests that seal no. 53 is Early Dynastic but it may also be Early Akkadian. Pottery indecisive.

UR III PG 1422: Multiple burials in deep square pit.  
Seals U.12470-1; Pots 4, 10, 20, 31, 49, 57, 66, 81,  
100, 110.

Seal U.12470, no. 290, shows battling animals and  
humans, engraved in Late Akk. times. The other seal,  
no. 292, is dated by Buchanan to Third Ur.

UR III PG 1845: Multiple burials in deep square pit.  
Beads U.15301, 15306, 15310, 15317; Seals U.15302,  
15307, 15308, 15309, 15318, 15320; Pots 5, 32, 44,  
50, 76, 108, 196, 200.

Buchanan assigns all the seals to the Third Dynasty  
(U.15302, no. 281; U.15307, no. 296; U.15308, no. 282;  
U.15309, no. 297 and U.15318, no. 283). The beads are  
of gold, silver, lapis, agate, carnelian, haematite,  
and steatite: necklaces of small lapis and gold balls.  
Lapis, chalcedony and agate.

UR III PG 1847: Multiple burials in deep square pit.  
Beads U.15305, 17803-4, 17807-8, 17813, 17815, 17817;  
Seals U.15303, 17649-50, 17656, 17812, 17815, 17817;  
Pots 21, 24, 34, 41, 44, 50, 76, 79, 80, 81, 97, 110,  
124, 133, 161, 198, 199.

Seals U.15303, no. 289, and U.17650, no. 288 are Akk.  
in style; U.17649, no. 285, is an Indianesque stamp  
seal; U.17656, no. 286, shows an ED III scene. The  
others (U.17812, no. 284, U.17815, no. 293), however,  
Buchanan assigned to the Neo-Sumerian or Third Ur  
period. Beads are of a great variety of materials and  
shapes and include calcite, chalcedony, steatite,  
copper, jasper, agate, lapis, crystal and carnelian:  
very small beads of carnelian and gold; lapis and

mother of pearl; a cat's eye agate; gold-plated copper, marble and a lapis fly amulet.

UR III PG 1849: Multiple burials in deep square pit. Beads U.17801, 17805-6, 17810-1; Seals U.17660, 17805-6, 17811; Pots 36, 161 and 219.

Seals U.17660 and U.17805 are not illustrated. U.17811, no. 287, is much decayed, but U.17806, no. 296A, is assigned by Buchanan to Ur III. Beads include the usual variety of materials and shapes - crystal, agate, marble, lapis, steatite, carnelian, cat's eye, gold-plated copper, silver and gold.

UR III PG 1850: Multiple burial in deep square pit. Buchanan dates this tomb to the reign of Shulgi, JAOS 74, p. 150.

Beads U.17911; Seals U.17904, 17912; Pote 4, 23, 29, 41, 42, 44, 53, 75, 76, 81, 83, 97, 98, 110, 117, 126, 191, 193, 198, 202, 221, 223.

Seals nos. 295 and 294 respectively are both typical Ur III seals. Beads of gold, agate, carnelian, lapis, granite and ? amber.

#### The "Sargonid" Cemetery

Akk. PG 67: Beads U.8040; Seal U.8041; Pots 50, 108, 174. Seal no. 322 shows an Akkadian contest scene. Beads of lapis and carnelian.

? PG 127: Beads U.8154; Pots 50, 108, 130.

Pot 50 occurs in Akk. and P.A. graves at Ur but in the Diyala in ED III contexts. Beads, lapis and a few carnelian.

? PG 215: Two uncatalogued lapis beads; Pots 5, 100.  
Pottery indecisive.

Akk. PG 384: Beads U.8748; Seal U.8747; Pots 72, 76.  
Seal no. 363 shows an Akk. mythological scene. Pot 76 occurs in both Akk. and P.A. graves, and continues to be used in the Diyala to Old Bab. times. Beads of silver, lapis, carnelian and one bleached carnelian.

? PG 396: Beads U.8753: Pots 7, 76.  
Pot 7 occurs in ED-P.I. contexts, while 76 occurs in Akk.-P.A. burials. Beads, small silver and lapis double conoids.

Akk.? PG 401: Beads U.8686; Seal U.8685.  
Stamp seal no. 370 is Indianesque, indicative of distant trade connections. Beads are a mixed lot of lapis, carnelian, sard, steatite, etc. on a single string.

Akk-PA PG 412: Beads U.9022; Pots 50, 100.  
Pot 50 occurs in Akk. and P.A. graves, Beads of gold-plated copper, a late feature, and lapis lazuli.

P.A. PG 414: Beads U.8781; Pots 81, 100.  
Pot 81 occurs in a P.A. grave. Beads of gold and lapis.

Akk-PA PG 433: Beads U.8974; Pots 5, 44.  
Pot 44 occurs in both Akk. and P.A. burials. At the Diyala it first appears in Late Akk. times. Gold-plated copper and lapis beads.

- P.A. PG 435: Beads U.8918-20; Seals U.8916-7; Pot 50.  
Seals nos. 306 and 340 are dated by Buchanan to P.A.  
Beads of gold, gold-plated copper, lapis and a few  
carnelian.
- Akk. PG 445: Beads U.8927; Seals U.8926; Pots 20, 76.  
Seal no. 319 shows an Akk. contest scene. Beads,  
small silver and lapis.
- Akk. PG 484: Seal U.9024; Pots 5, 44, 100.  
Seal no. 373, carved from lapis lazuli, shows an Akk.  
contest scene.
- P.A. PG 489: Beads U.8970; Seal U.8971; Pot 44.  
Seal no. 359, poorly cut, is of P.A. type. Beads of  
gold-plated copper and lapis lazuli.
- Akk. PG 496: Seal. U.9010.  
The lapis lazuli seal of ur-igi-gal, no. 320, is  
engraved with an Akk. contest scene.
- Akk. PG 503: Seal U.8988.  
The lapis lazuli seal, no. 308, has gold caps and is  
inscribed "daughter of Sargon". See Chapter II, p. 97  
above.
- Akk. PG 506: Beads U.9231; Seal U.9056.  
Seal no. 252 is dated by Buchanan to Late Akk. Beads  
of lapis, carnelian and copper.

P.A. PG 516: Beads U.9030; Seal U.9027; Pots 110, 172.  
Seal no. 302 shows a late ED III contest scene, but  
Pot 110 occurs in P.A. burials. Beads are minute, in  
carnelian and lapis. In this instance the seal is  
probably an heirloom.

Akk. PG 540: Seal U.9064; Pots 93, 198.  
Buchanan dates seal no. 328 to Late Akk.

? PG 552: Beads U.9094; Seal U.9092.  
Seal not illustrated. Beads, minute silver and lapis  
balls.

Akk. PG 576: Beads U.9327; Seal U.9326; Pots 45, 132.  
Seal no. 273 is indistinct but probably Akk. Pot 132  
occurs in Akk. graves. Beads are very small gold and  
lapis and a single jasper tube.

Akk-PA PG 609: Beads U.9520; Pot 199.  
Pot type 199 occurs from Akk. to Post-Akk. Beads of  
gold, gold-plated copper, carnelian, steatite and  
lapis lazuli.

Akk-PA PG 622: Beads U.9537; Pots 44, 76, 199.  
Pottery all Akk. to Post-Akk. Beads of gold, silver,  
lapis, carnelian, agate and paste.

? PG 632: Beads U.9545; Pot 195.  
Pottery indecisive. Beads of silver, gold, lapis and  
banded sard.

- Akk. PG 635: Beads U.9558; Seals U.9551-2; Pot 76.  
Seals nos. 238 and 372 both show Akk. contest scenes.  
Beads of lapis, silver and carnelian.
- ? PG 646: Beads U.9561; Pot 195  
Pottery indecisive. Beads, assorted.
- Akk. PG 647: Beads U.9581; Seal U.9578.  
Buchanan dates seal no. 348 to Late Akkadian times.  
Beads of very small lapis lazuli balls.
- Akk-PA PG 666: Beads U.9607; Pots 50, 83, 108, 202, 222.  
Pot types 50, 83 and 202 occur in Akk. to P.A. graves.  
Beads of gold, carnelian, lapis and a single sard  
barrel.
- P.A. PG 671: Beads U.9639; Seal U.9642; Pot 44.  
Buchanan dates seal no. 332 to P.A. Beads of gold,  
silver, lapis, carnelian and agate.
- Akk-PA PG 672: Beads U.9612; Pots 158, 195, 202.  
Pot 202 is Akk. to P.A. Beads of gold, lapis and copper.
- Akk. PG 673: Beads U.9627-9; Seal U.9634; Pots 5, 76, 83,  
84, 198.  
Buchanan dates seal no. 327 to Late Akkadian. Beads of  
gold, silver and copper: carnelian, lapis lazuli,  
agate and paste.

Akk. PG 699: Beads U.9752-4; Seals U.9750-1.

Seal no. 364, U.9750, is dated by Frankfort to the Akkadian period (Cylinder Seals, Pl. XVIII k) and shows a typical mythological scene. The other, no. 298, is dated by Frankfort to ED III (Cylinder Seals, Pl. XIII e). These two seals, found in the same grave, provide an interesting example of the preservation of an early seal. Beads are an assorted collection of gold-plated copper, silver, gold, lapis, carnelian and rock-crystal.

Akk. PG 703: Beads U.9812; Seal U.9813; Pot 4.

Seal no. 313 is probably Early Akkadian in date, although the execution is stiff. Beads are a mixed group of gold, carnelian, lapis, jasper, sard, steatite and agate.

P.A. PG 704: Beads U.9704; Seal U.9710; Pot 224.

Buchanan dates seal no. 337 to Ur III. Beads a varied assortment of silver, lapis, carnelian, chrysoprase, agate, gold, lapis and crystal.

P.A. PG 747: Beads U.9954; Pots 50, 110.

Pot 50 is Akk. to P.A., while 110 is only P.A. Beads, small lapis, carnelian and paste rings.

P.A. PG 825: Beads U.10789, 10793; Seal U.10796; Pots 103, 184, 251.

Buchanan dates seal no. 346 to P.A. Beads, a bracelet

of gold, silver and lapis: a necklace of gold, carnelian, sard, sardonyx, crystal and agate.

Akk. PG 848: Beads U.10376; Pots 60, 108, 174, 201. Pot 174 is Akk. to P.A., while 201 occurs in Akk. burials. Beads, minute balls of gold, lapis and carnelian.

Akk. PG 859: Beads U.11124; Seal U.11123. Frankfort places seal no. 207 in his Akkadian group (Cylinder Seals, Plate XVII h). Four beads only, of carnelian and lapis.

Akk-PA PG 884: Beads U.10370; Pots 198, 226. Both vessels occur in Akk. and P.A. burials. Beads of gold, lapis and agate.

Akk-PA PG 908: Beads U.10377; Pot 44. Pot 44 is Akk. to P.A. Beads of gold, lapis, carnelian and agate.

Akk-PA PG 958: U.11414; Pots 45, 51, 117. Pots 44 and 117 are Akk. to Post Akk. U. 11414 is a bead-maker's equipment, including raw stones, among which are pieces of lapis lazuli.

P.A. PG 963: Beads U.11411; Seal U.11410. Buchanan dates seal no. 331 to P.A. Beads of gold, carnelian, lapis, agate and paste.

- Ark. PG 968: Beads U.11417; Seal U.11418; Pot 76.  
Seal no. 315, inscribed with the name of Ur-Gilgamesh, the scribe, is Akkadian in style. Beads of lapis, carnelian and jasper.
- P.A. PG 973: Beads U.11427; Seal U.11426.  
Buchanan dates seal no. 349 to P.A. Beads of carnelian, lapis, silver, jasper and glass.
- P.A. PG 985: Beads U.11450; Seals U.11447, 11449, Pots 5,100.  
Buchanan dates seal no. 345, U.11447, to P.A., to which period the other, no. 344, belongs also. Beads of lapis, silver, carnelian and one gold.
- P.A. PG 986: Beads U.11452; Seal U.11452.  
Buchanan dates seal no. 338 to P.A. A few silver and lapis beads.
- ? PG 989: Beads U.11451; Pot 5  
Pot form indecisive. Beads of silver, lapis and carnelian.
- P.A. PG 991: Beads U.11444; Seals U.11442, U.11443; Pot 100.  
Buchanan dates U.11442, no. 350, to P.A.; the other seal is not illustrated. A few small beads of carnelian, lapis and shell.
- Ark. PG 1002: Beads U.11441; Seal U.11456.  
Seal no. 233 is Early Akk. in style. Only 7 beads of agate, carnelian, steatite, shell, lapis and paste.

- P.A. PG 1003: Seals U. 11457-8; Pots 19, 117, 155, 196, 226. Buchanan dates U.11458, no. 339, to Ur III; the other, no. 317, shows a scene of characteristic Akkadian type.
- P.A. PG 1012: Beads U.11466; Seal U.11464. Buchanan dates seal no. 341 to P.A. times. Lapis and gold-plated copper beads.
- ? PG 1041: Seal U.11480. This lapis lazuli seal is not illustrated.
- Akk. PG 1045: Beads U.11493; Seal U.11492. Seal no. 323 is typically Akk. in style. Beads are diamonds of silver and lapis.
- P.A. PG 1067: Beads U.11598; Seal U.11598. Seal no. 329 is dated to P.A. by Buchanan. A few copper and lapis beads.
- P.A. PG 1092: Seals U.11590-1. Buchanan dates U.11591, no. 330, to P.A., to which period the other lapis lazuli seal, no. 311, also belongs.
- P.A. PG 1094: Seals U.11580-1. Buchanan dates U.11580, no. 333, to P.A.: the style of the second, no. 303, is similar.
- P.A. PG 1095: Seal U.11592; Pot 76. Buchanan dates this lapis seal, no. 347, to P.A.

? PG 1108: Beads U.11714; Pot 174.

Pot 174 occurs from ED III to P.A. Small lapis date-shaped beads.

Akk. PG 1154: Beads U.11844; Seal U.11843; Pot 76.

Seal no. 316 is characteristically Akk. in style.

Beads of carnelian, lapis and silver.

? PG 1191: Beads U.11975; Pot 228.

Pot 228 is not included in our dated series. Beads of lapis and carnelian.

Akk. PG 1199: Beads U.11994; Pots 44, 108, 197, 243.

Pot type 44 occurs in Akk. and later graves, while 197 is only Akk. In the Diyala district a similar vessel occurs in contexts P.I. to L. Akk. Pot 243 is the fruitstand, common in ED III. As noted before, the evidence of the Kish Cemetery 'A' and Red Stratum graves, in which it is found, suggests that it lasts into Akkadian times. Beads of silver, lapis and carnelian.

P.A. PG 1205: Beads U.11984; Seal U.11987.

Buchanan dates seal no. 351 to P.A. Beads of lapis, carnelian and gold-plated copper.

Akk. PG 1213: Beads U.12003; Seal U.12004; Pots 5, 131.

Seal no. 358 is probably Akkadian. A mixed collection of beads, including agate, lapis, carnelian and glass.

? PG 1226: Beads U.12035; Seal U.12041; Pot 83, 100, 159.

A poorly cut seal, which is not illustrated. Pot 83 occurs from P.I. times on. Beads, minute rings of lapis and glazed frit - one calcite bead.

? PG 1292: Beads U.12206; Pots 5, 100.

Pottery indecisive. Carnelian and lapis ring beads.

Akk. PG 1379: Beads U.12664; Seal U.12664; Pots 45, 100.

Lapis seal no. 141 can be dated to the Akk. period, cf. CANES I, no. 248. Beads of lapis and silver.

P.A. PG 1383: Beads U.12677; Seal U.12677; Pots 108, 110.

Pot 110 occurs in graves of Ur III. Lapis seal, not illustrated, is said to be decorated with a geometric design. Geometric motifs are not common only to the Jemdat Nasr period but do also occur in P.A. times, see CANES I, no. 266. Carnelian, lapis and marble beads.

? PG 1470: Seal U.13513.

Lapis seal, not illustrated.

? PG 1490: Beads U.13523; Pot 108.

Pottery indecisive. Beads of lapis, carnelian, haematite. Two frog amulets of lapis lazuli.

APPENDIX C

Lapis lazuli seals from excavations,  
in Museums and in private collections.

The raison d'être of this Appendix is embodied in the Chart at the end: it was to determine the fluctuating popularity and use of lapis lazuli. As noted before (Chapter II, p. 47), seals are the most sensitive diagnostic of the use of a material and a wide range of catalogues were therefore analysed for their seals of lapis lazuli. Once extracted, tentative datings were given to the seals in the light of existing evidence. Miss Barbara Parker of the Institute of Archaeology very kindly checked some of these.

Having collected and dated these lapis lazuli seals, the tally occurring in each period was enumerated and the chart prepared.

E. Porada and B. Buchanan, C.A.N.E.S. I, The Collection of the Pierpont Morgan Library.

p. 11	Pl. X	No. 62	E.D. II
p. 12	Pl. XI	No. 65	E.D. III
p. 13	Pl. XIII	No. 78	E.D. III
p. 14	Pl. XIII	No. 80	E.D. III
p. 14	Pl. XIII	No. 81	E.D. III
p. 14	Pl. XIII	No. 82	E.D. III
p. 14	Pl. XIV	No. 85	E.D. III
p. 14	Pl. XIV	No. 88	E.D. III
p. 14	Pl. XIV	No. 89	E.D. III
p. 14	Pl. XV	No. 92	E.D. III
p. 17	Pl. XVIII	No. 110	E.D. III

p. 18	Pl. XIX	No. 121	E.D. III
p. 18	Pl. XIX	No. 123	E.D. III
p. 18	Pl. XIX	No. 124	E.D. III
p. 19	Pl. XX	No. 130	E.D. III
p. 21	Pl. XXIII	No. 145	Akkadian
p. 22	Pl. XXVI	No. 165	Akkadian
p. 24	Pl. XXVII	No. 176	Akkadian
p. 24	Pl. XXVII	No. 177	Akkadian
p. 25	Pl. XXIX	No. 190	Akkadian
p. 26	Pl. XXXI	No. 199	Akkadian
p. 30	Pl. XXXIX	No. 247	Akkadian
p. 32	Pl. XL	No. 254	Post-Akkadian
p. 33	Pl. XLI	No. 263	Post-Akkadian
p. 36	Pl. XLIV	No. 288	Ur III
p. 36	Pl. XLIV	No. 290	Ur III
p. 36	Pl. XLV	No. 291	Ur III
p. 37	Pl. XLV	No. 293	Ur III
p. 38	Pl. XLVII	No. 306	Isin-Larsa
p. 41	Pl. XLVIII	No. 318	Old Babylonian
p. 42	Pl. XLIX	No. 324	Old Babylonian
p. 43	Pl. L	No. 340	Old Babylonian
p. 49	Pl. LVI	No. 393	Old Babylonian
p. 61	Pl. LXXIII	No. 539	Old Babylonian
p. 61	Pl. LXXIII	No. 540	Old Babylonian
p. 66	Pl. LXXXI	No. 586	Late Kassite
p. 93	Pl. CXV	No. 762	Assyrian (721-705 B.C.)
p. 95	Pl. CXVIII	No. 777	Assyrian (Late 8th & 7th C.)
p. 95	Pl. CXVIII	No. 780	Assyrian (Late 8th & 7th C.)
p. 95	Pl. CXIX	No. 781	Neo-Babylonian
p. 95	Pl. CXIX	No. 783	Neo-Babylonian
p. 95	Pl. CXIX	No. 784	Neo-Babylonian
p. 99	Pl. CXXI	No. 800	Neo-Babylonian

H. Frankfort, Stratified Cylinder Seals from the Diyala Region, O.I.P. LXXII.

Pl. 33	No. 331	Kh. III 922	E.D. III
Pl. 35	No. 355	Kh. III 89	E.D. II/III <sup>1</sup>
Pl. 36	No. 372	Kh. VIII 113	E.D. III
Pl. 36	No. 375	Kh. IX 40	E.D. III
Pl. 61	No. 644	As. 31:532	Akkadian
Pl. 63	No. 674	As. 32:563	Akkadian ?
Pl. 64	No. 685	As. 32:55	Akkadian
Pl. 64	No. 686	As. 31:639	Akkadian
Pl. 66	No. 709	As. 30:1000	Isin-Larsa (Seal of Bilalama)
Pl. 67	No. 729	As. 33:385	Isin-Larsa
Pl. 70	No. 769	As. 35:80	Akkadian

(1) Seals in [ ] are excluded from the Chart, but given here for completeness of record.

Pl. 72	No. 791	Ag. 36:116	Jemdat Nasr
Pl. 79	No. 847	Ag. 36:324	Jemdat Nasr
△Pl. 85	No. 896	Ag. 36:447	Early Dynastic II/III
Pl. 86	No. 913	Ish. 35:72	Old Babylonian
△Pl. 88	No. 937	Ish. 34:75	?]
Pl. 89	No. 951	Ish. 35:50	Isin-Larsa
△Pl. 91	No. 973	A. 7207	Early Dynastic II/III

H.H. von der Osten, Ancient Oriental Seals in the Collection of Mrs. Agnes Baldwin Brett, O.I.P. XXXVII

△p. 4	Pl. I	No. 9	Stamp seal]
p. 5	Pl. III	No. 21	E.D. III
p. 5	Pl. III	No. 22	E.D. III
p. 6	Pl. III	No. 25	E.D. III
p. 6	Pl. III	No. 26	E.D. III
p. 6	Pl. IV	No. 30	Jemdat Nasr
p. 6	Pl. IV	No. 31	Jemdat Nasr
p. 6	Pl. IV	No. 32	Jemdat Nasr
p. 6	Pl. IV	No. 33	Jemdat Nasr
p. 6	Pl. IV	No. 34	Jemdat Nasr
p. 7	Pl. IV	No. 35	Jemdat Nasr
p. 8	Pl. VI	No. 47	Old Babylonian
p. 19	Pl. XI	No. 130	Peripheral, 8th-7th C.
p. 20	Pl. XII	No. 143	Neo-Babylonian

H.H. von der Osten, Ancient Oriental Seals in the Collection of Mr. Edward T. Newell, O.I.P. XXII.

p. 17	Pl. V	No. 39	E.D. III
p. 19	Pl. VII	No. 67	Jemdat Nasr
p. 21	Pl. IX	No. 83	E.D. III
p. 21	Pl. IX	No. 87	Akkadian
p. 22	Pl. X	No. 101	E.D. III
p. 23	Pl. XI	No. 113	E.D. III
p. 24	Pl. XII	No. 118	Post-Akkadian, Guti.
p. 31	Pl. XV	No. 181	Old Babylonian
p. 33	Pl. XVI	No. 191	Old Babylonian
p. 63	Pl. XXIX	No. 429	9th to 8th centuries
p. 66	Pl. XXXI	No. 458	Achaemenian
p. 72	Pl. XXXIII	No. 537	Syrian, 7th C., scarab
△p. 78	Pl. XXXIV	No. 606	Sasanian stamp seal]
△p. 79	Pl. XXXV	No. 625	Sasanian stamp seal]
p. 83	Pl.	No. 665	Kassite, inscribed. Given to Adad by Kurigalzu, son of Burnaburiaš. <u>Ibid</u> , p. 165.

XXXVIII

G.A. Eisen, Ancient Oriental Cylinder and Other Seals with a description of the collection of Mrs. William H. Moore, O.I.F. XLVII.

p. 42	Pl. III	No. 18	E.D. III
p. 42	Pl. IV	No. 20	E.D. III
p. 43	Pl. IV	No. 26	E.D. III
p. 44	Pl. V	No. 30	Akkadian
p. 45	Pl. V	No. 37	Akkadian, from Kish
p. 46	Pl. VI	No. 47	Akkadian
p. 52	Pl. X	No. 86	Syrian, Late First Dyn. of Bab. Alalakh 7.

The Walters Art Gallery, Baltimore, from photographs supplied by the Museum and C.H. Gordon, "Western Asiatic Seals in the Walters Art Gallery", Iraq VI, pp. 3-34.

Iraq VI, p. 7, no. 3 :	WAG 42.434	E.D. III
Iraq VI, p. 9, no. 11:	WAG 42.189	Old Babylonian
	WAG 42.607	Akkadian
	WAG 42.638	Akkadian
	WAG 42.697	Akkadian, ? peripheral
	WAG 42.699	Isin-Larsa
	WAG 42.828	E.D. III.

C.L. Woolley, The Royal Cemetery, Ur Excavations II, pp. 335-364.

Pl. 192	No. 1	U.11110	PG 861	Jemdat Nasr
	No. 2	U.12658	PG 1374	Jemdat Nasr
	No. 5	U.12711	PG 1412	Jemdat Nasr
	No. 7	U.12704F	PG 1403	E.D. II
	No. 12	U.11734	PG 1054	E.D. III
Pl. 193	No. 14	U.12427	PG 1237	E.D. III
	No. 15	U.11871	PG 1163	E.D. III, peripheral
	No. 16	U.10939	PG 800	E.D. III, Queen Pu'abi
	No. 17	U.10871	PG 800	E.D. III, "
	No. 18	U.10872	PG 800	E.D. III, "
	No. 19	U.10448A	PG 800	E.D. III, A-BAR-GI
	No. 20	U.14319	PG 1750	E.D. III
	No. 22	U.12374	PG 1237	E.D. III
Pl. 194	No. 23	U.12387	PG 1237	E.D. III
	No. 26	U.8119	PG 156	E.D. III
	No. 27	U.8615	PG 337	E.D. III
	No. 28	U.11774	PG 1130	E.D. III
	No. 29	U.10823	PG 789	E.D. III
	No. 30	U.12258	PG 1315	E.D. III
	No. 33	U.12256	PG 1312	E.D. III

Pl. 195	No. 35	U.11773	PG 1130	E.D. III	
	No. 36	U.10822	PG 789	E.D. III	
	No. 37	U.14041	PG 1625	E.D. III	
	No. 39	U.12380	PG 1237	E.D. III	
Pl. 196	△No. 43	U.12448	PG 1238	E.D. II, now in BM	
	No. 47	U.8228	PG 165	E.D. II	
	No. 53	U.12720	PG 1420	Akkadian	
Pl. 198	No. 65	U.11825	PG 1050	E.D. III	
	No. 66	U.12707E	PG 1407	E.D. III	
	No. 67	U.12674	PG 1382	E.D. III	
	No. 68	U.12704G	PG 1403	Akkadian	
	No. 69	U.11554	PG 1068	E.D. III	
	No. 70	U.12654	PG 1374	E.D. III	
	No. 71	U.11938	PG 1178	E.D. III	
	No. 72	U.12413	PG 1227	E.D. III	
	No. 73	U.11112	PG 861	Akkadian	
	No. 74	U.12701E	PG 1400	Early Akkadian	
	Pl. 199	No. 78	U.11899	PG 1172	Jemdat Nasr ?
No. 84		U.11757	-	Jemdat Nasr ?	
Pl. 200	No. 98	U.9315	-	E.D. III	
	No. 99	U.7985	PG 31	E.D. III	
	No. 100	U.8053	-	E.D. III	
	No. 101	U.7657	PG 15	E.D. III	
	No. 105	U.8792	-	E.D. III	
	No. 106	U.11828	-	E.D. III	
	No. 107	U.8006	PG 55	E.D. III	
	No. 118	U.9023	-	E.D. III	
Pl. 201	No. 118	U.9023	-	E.D. III	
Pl. 203	No. 129	U.11488	PG 1027	Jemdat Nasr ?	
	No. 130	U.11973	PG 1197	Jemdat Nasr ?	
	No. 131	U.11868	PG 1162	Jemdat Nasr ?	
	No. 133	U.8169	PG 153	Jemdat Nasr	
	No. 134	U.8584	PG 323	Ur III	
	No. 135	U.12011	PG 1216	E.D. III	
	No. 138	U.8367	PG 221	E.D. III	
	△No. 139	U.8656	PG 381	ED III, now in BM	
	No. 140	U.11952	PG 1187	E.D. III	
	No. 141	U.12664	PG 1379	E.D. III	
	△No. 146	U.12680	PG 1387	ED III, now in BM	
	Pl. 204	No. 156	U.7955	PG 35	Post-Akkadian
		No. 157	U.10766A	PG 867	E.D. III
		No. 158	U.8464	PG 288	Akkadian
		△No. 159	U.10168	PG 780	E.D. III, now in BM
		No. 160	U.10303	PG 796	Akkadian ?
No. 161		U.11499	PG 1043	E.D. III	
No. 162		U.9242	PG 482	Akk. or Post-Akk.	
No. 163		U.12157	PG 1276	Akkadian	
△No. 165		U.10153	PG 792	ED III/Akkadian	
No. 166		U.8359	PG 219	E.D. III	
No. 167		U.9082	PG 544	Akkadian	

Pl. 205	No. 168	U.10765	PG 867	Akkadian
	No. 169	U.9764	PG 697	Akkadian
	No. 175	U.9150	PG 543	Akkadian
	No. 181	U.8666	PG 395	Akkadian
	No. 182	U.9183	PG 549	Akkadian
Pl. 206	No. 187	U.7954	PG 35	Akk or Post-Akk. <sup>1</sup>
	No. 188	U.7956	PG 35	Akkadian
	No. 190	U.9681	PG 689	Akkadian
Pl. 207	No. 197	U.10766B	PG 867	Post-Akkadian
	No. 202	U.8339	PG 209	Jemdat Nasr ?
	No. 203	U.8420	PG 226	Jemdat Nasr ?
	No. 204	U.8681	-	Jemdat Nasr ?
	No. 205	U.9263	-	Jemdat Nasr ?
	No. 206	U.11895	-	Jemdat Nasr ?
	No. 207	U.11123	PG 859	Akkadian
Pl. 208	<del>No. 209</del>	U.15473	-	ED III, now in BM <sup>7</sup>
	No. 216	U.8981	-	ED III, seal of Nin-
	No. 217	U.11897	PG 1173	Akkadian. tur-nin.
	No. 218	U.12706	PG 1405	Akkadian ?
	No. 220	U.8345	-	Akkadian ?
	No. 226	U.9809	-	Akkadian
	No. 227	U.9321	-	Akkadian
Pl. 209	No. 239	U.12079	-	Akkadian
	No. 246	U.8991	PG 505	Akkadian
Pl. 210	No. 251	U.8965	PG 345	Akk or Post-Akk. <sup>1</sup>
	No. 262	U.11438	-	Akkadian
	No. 266	U.12032	-	Akkadian ?
	No. 273	U.9326	PG 576	Akkadian
	No. 275	U.11402	-	Akkadian
Pl. 211	<del>No. 279A</del>	U.12701F	PG 1400	ED III/Akk. <sup>7</sup>
	<del>No. 280</del>	U.12705	PG 1414	ED III/Akk. <sup>7</sup>
	No. 286	U.17656	PG 1847	ED III
	No. 289	U.15303	PG 1847	Akkadian
	No. 290	U.12470	PG 1422	Akkadian
	No. 292	U.12471	PG 1422	Ur III
	No. 294	U.17912	PG 1850	Ur III
	No. 295	U.17904	PG 1850	Ur III
	No. 297	U.15309	PG 1845	Ur III
	Pl. 212	No. 298	U.9751	PG 699
No. 302		U.9027	PG 516	E.D. III
No. 303		U.11581	PG 1094	Akkadian
No. 306		U.8916	PG 435	Akk or Post-Akk. <sup>1</sup>
No. 308		U.8988	PG 503	Akkadian
No. 310		U.9693	PG 695	Akkadian
No. 311		U.11590	PG 1092	Akkadian
No. 313		U.9813	PG 703	Akkadian

(1) These seals are considered by Buchanan to be Post-Akkadian in style, see JAOS 74, p. 151, note 30: Miss Barbara Parker, however, assigns them to the Akkadian period, on account of the "chignon" worn at the back of the head - see Chapter II, p. 74. Buchanan's dating is followed on the Seal Distribution Chart

Pl. 213	No. 319	U.8926	PG 445	Akkadian	
	No. 328	U.9064	PG 540	Akkadian	
	No. 329	U.11598	PG 1067	Akk or Post-Akk.	1
	No. 333	U.11580	PG 1094	Akk or Post-Akk.	1
Pl. 214	No. 337	U.9710	PG 704	Akk or Post-Akk.	1
	No. 339	U.11458	PG 1003	Akk or Post-Akk.	1
	No. 341	U.11464	PG 1012	Akk or Post-Akk.	1
	No. 346	U.10796	PG 825	Post-Akkadian	
	No. 347	U.11592	PG 1095	Akk or Post-Akk.	1
	No. 350	U.11442	PG 991	Akk or Post-Akk.	1
	No. 359	U.8971	PG 489	Akkadian ?	
	No. 369	U.7957	PG 35	Akk or Post-Akk.	1
Pl. 215	No. 372	U.9552	PG 635	Akkadian	
Pl. 216	No. 373	U.9024	PG 484	Akkadian	
	No. 376	U.8417	-	Akkadian	
	No. 384	U.9529	-	Ur III	

L. Legrain, Seal Cylinders, Ur Excavations X.

p. 11	No. 37	U.12058	Jemdat Nasr	
p. 12	No. 51	U.19132	Jemdat Nasr	
	No. 53	U.19125	Jemdat Nasr	
p. 13	<del>No. 61</del>	U.20062	Jemdat Nasr, now in <u>BM</u> 7	
	No. 80	U.19075	Jemdat Nasr	
	No. 81	U.6133	Jemdat Nasr	
	No. 88	U.18951	E.D. II	
p. 15	No. 119	U.19119	E.D. III	
	No. 120	U.19072	E.D. III	
	<del>No. 125</del>	U.18983	E.D. III, now in <u>BM</u> 7	
	No. 129	U.18986	Akkadian ?	
p. 16	No. 130	U.18914	Akkadian	
	No. 132	U.1054	Post-Akkadian	
	No. 133	U.16122	Akkadian	
p. 17	No. 139	U.18917	Akkadian	
	No. 156	U.19005	E.D. III	
p. 18	No. 182	U.19000	Akkadian	
p. 19	No. 200	U.18994	Akkadian	
	No. 208	U.16399	Akkadian	
	No. 218	U.20038	Old Babylonian	
	No. 221	U. -	Akkadian	
p. 20	No. 228	U.18975	Akkadian	
	No. 235	U. 54	Akkadian	
p. 21	No. 245	U.18208	Old Babylonian	
p. 22	No. 251	U.7664	Ur III	
	No. 253	U.18279	Ur III	
	No. 255	U.16360	Ur III	
p. 25	No. 301	U. 55	Akkadian ?	

(1) See note (1) on preceding page.

p. 27	No. 348	U.15043	Ur III
p. 29	No. 379	U.16006	Old Babylonian
	No. 384	U.16801	Isin Larsa
p. 36	No. 478	U.10407	Old Babylonian
p. 38	No. 508	U.18365	Old Babylonian

D.J. Wiseman, Catalogue of the Western Asiatic Seals in the British Museum - I, Cylinder Seals, Uruk-Early Dynastic Periods.

p. 12, Pl. 10 l	BM 128841		Jemdat Nasr
p. 12, Pl. 10 m	BM 123572	( <u>UE X</u> , 61)	Jemdat Nasr
p. 16, Pl. 13 e	BM 104493		E.D. II
p. 18, Pl. 15 d	BM 122550	( <u>UE II</u> , 43)	E.D. II
p. 19, Pl. 16 b	BM 21124		E.D. III
p. 20, Pl. 16 g	BM 121561	( <u>UE II</u> , 159)	E.D. III
p. 21, Pl. 17 g	BM 21122		E.D. III
p. 21, Pl. 17 i	BM 122559	( <u>UE II</u> , 68)	E.D. III
p. 22, Pl. 18 a	BM 129100		E.D. III
p. 22, Pl. 18 b	BM 122556	( <u>UE II</u> , 146)	E.D. III
p. 22, Pl. 18 c	BM 89055		E.D. III
p. 23, Pl. 19 c	BM 122536	( <u>UE II</u> , 55)	E.D. III
(Lapis core, within limestone: seal of Mes-kalam-dug)			
p. 25, Pl. 20 h	BM 102522		E.D. III
p. 26, Pl. 22 c	BM 103240		E.D. III
p. 26, Pl. 22 d	BM 22962		E.D. III
p. 26, Pl. 23 c	BM 122560		E.D. III
p. 27, Pl. 23 h	BM 123626	( <u>UE II</u> , 209)	E.D. III
p. 27, Pl. 24 a	BM 121546	( <u>UE II</u> , 36)	E.D. III
p. 27, Pl. 24 b	BM 102509		E.D. III
p. 28, Pl. 24 d	BM 102067		E.D. III
p. 28, Pl. 25 b	BM 121545	( <u>UE II</u> , 17)	E.D. III
p. 29, Pl. 25 c	BM 121544	( <u>UE II</u> , 16)	E.D. III
p. 30, Pl. 26 c	BM 123570	( <u>UE X</u> , 125)	E.D. III
p. 30, Pl. 26 d	BM 89652		E.D. III
p. 30, Pl. 26 e	BM 120551	( <u>UE II</u> , 139)	E.D. III

Uncatalogued seals of lapis lazuli in the British Museum<sup>1</sup>

BM 12285	Akkadian
BM 22427	Akkadian
BM 89165	Akkadian
BM 89366	Akkadian
BM 103329	Akkadian
BM 129461	Akkadian
BM 103008	Post-Akkadian
BM 129496	Post-Akkadian
BM 130809	Post-Akkadian
BM 132881	Post-Akkadian

(1) Seals collected and dated for the author by Miss D. Collon, during the period of the closure of the Students' Room.

BM 89534	Ur III
BM 89535	Ur III
BM 102058	Isin-Larsa
BM 102567	Isin-Larsa
BM 102 ?	Old Babylonian
BM 102406	Kassite
BM 113868	Kassite
BM 129540	Neo-Assyrian
BM 129556	Neo-Assyrian
BM 89361	Neo-Babylonian
BM 130690	Persian - stamp seal

Briggs Buchanan, Catalogue of Ancient Near Eastern Seals  
in the Ashmolean Museum, Vol. I, Cylinder Seals.

p. 20, no. 93	1931.108	Post-Jemdat Nasr ?	From Kish
p. 28, no. 133	1891.453	E.D. II	
p. 40, no. 207	1925.108	E.D. III	
p. 43, no. 227	1925.110	E.D. III.	From Kish.
p. 54, no. 274	1931.113	Akkadian.	From Kish.
p. 73, no. 390	-	Post-Akkadian.	
p. 79, no. 442	1921.958	Post-Akkadian.	
p. 102, no. 561	1892.1421	Kassite	
p. 114, no. 630	1932.319	Neo-Assyrian.	From Kish.
p. 117, no. 659	1954.205	Neo-Babylonian,	worked in Neo-Assyrian times
p. 120, no. 672	1930.119	Persian.	From Kish.
p. 121, no. 676	1929.241	Persian.	From Kish.

L. Delaporte, Catalogue des Cylindres, Cachets et Pierres  
Gravées de Style Oriental, I, Fouilles et Missions, Musée  
du Louvre.

p. 8, Pl. 3,4	Telloh 84, MNB 1343	Jemdat Nasr ?
p. 40, Pl. 23, 12	Susa 226, AS.5402	?
p. 54, Pl. 31, 5	Susa 433, AS.B.323	Akkadian
p. 56, Pl. 32, 10	Susa 460, AS.A.7456	Jemdat Nasr ?
p. 59, Pl. 33, 17	Susa 483, AS.9982	Akkadian ?
p. 59, Pl. 37, 7	Susa 485 <sup>b</sup> , AS.10060	Old Babylonian
p. 62, Pl. 35, 7	Susa 516, AS.9126	Old Babylonian
p. 62, Pl. 35, 20	Susa 520, AS.5361	Old Babylonian
p. 69, Pl. 50, 9	Dieulafoy 24, AOD 31	Akkadian
p. 75, Pl. 53, 3	Dieulafoy 107, AOD 79	Old Babylonian
p. 79, Pl. 52, 22	Dieulafoy 151, AOD 124	?

L. Delaporte, Catalogue des Cylindres, Cachets et Pierres Gravées de Style Oriental, II, Acquisitions, Musée du Louvre.

p. 97, Pl. 61, 9	A.3, AO 2390	Jemdat Nasr
p. 99, Pl. 64, 5	A.37, AO 7228	E.D. III
p. 99, Pl. 65, 2	A.44, AO 2389	E.D. II ?
p. 99, Pl. 65, 3	A.45, AO 2106	E.D. II ?
p. 100, Pl. 65, 7	A.50, AO 2401	E.D. III
p. 101, Pl. 66, 4	A.63, AO 2391	Akkadian
p. 101, Pl. 66, 11	A.71, MNB 1923	Akkadian
p. 105, Pl. 68, 3	A.99, AO 1641	Akkadian
p. 106, Pl. 69, 7	A.114 <sup>b</sup> , N 8408	Akkadian
p. 107, Pl. 70, 4	A.121, AO 4715	Akkadian
p. 108, Pl. 70, 10	A.130, AO 1515	Akkadian
p. 113, Pl. 73, 10	A.168, AO 2264	Akkadian
p. 114, Pl. 74, 6	A.177, AO 4415	Akkadian
p. 114, Pl. 74, 13	A.182, AO 6656	Old Babylonian
p. 114, Pl. 74, 12	A.184, AO 2388	Old Babylonian
p. 115, Pl. 75, 1	A.189, AO 4416	Akkadian
p. 115, Pl. 75, 4	A.192, AO 4638	Ur III
p. 116, Pl. 75, 13	A.204, KLq 39	Isin Larsa
p. 116, Pl. 75, 23	A.214, KLq 50	Ur III
p. 116, Pl. 75, 25	A.216, AO 4771	Ur III
p. 118, Pl. 76, 20	A.245, KLq 30	Isin Larsa
p. 162, Pl. 85, 12	A.619, AO 4485	Neo-Babylonian
p. 163, Pl. 91, 5	A.633, AO 6197	Late Assyrian 7th C.
p. 169, Pl. 91, 16	A.711	Neo-Babylonian
p. 179, Pl. 93, 18	A.818, AO 4601	Kassite
Dedicated to Enlil by Kurigalzu, son of Burnaburiaš		
p. 179, Pl. 93, 9	A.820, AO 7705	Kassite
p. 180, Pl. 93, 16	A.830, AO 264	Assyrian, 9th C.

L. Delaporte, Catalogue des Cylindres Orientaux et des Cachets Assyro-Babyloniens, Perses et Syro-Cappodociens de la Bibliothèque Nationale.

⊕ p. 25, Pl. V, 47	No. 47	E.D. III/Akk.7
p. 57, Pl. X, 97	No. 97	Isin Larsa ?
p. 61, Pl. X, 104	No. 104	Old Babylonian
p. 61, Pl. X, 105	No. 105	Old Babylonian
p. 74, Pl. XIII, 131	No. 131	Old Babylonian
p. 309, Pl. XXXVI, 570	No. 570	Assyrian 7th C.

Anton Moortgat, Vorderasiatische Rollsiegel, Ein Beitrag zur Geschichte der Steinschneidekunst

p. 87	No. 30, VA 11040	Uruk IV
p. 92	No. 102, VA 7525	E.D. III
p. 93	No. 112, VA 3251	E.D. III

p. 93	No. 113, VA 3952	E.D. III
p. 94	No. 114, VA 3977	E.D. III
p. 94	No. 115, VA 692	E.D. III
p. 94	No. 116, VA 3407	E.D. III
p. 94	No. 118, VA 3250	E.D. III
p. 94	No. 119, VA 3252	E.D. III
p. 95	No. 126, VA 2843	Early Akkadian
p. 95	No. 134, VA 3979	E.D. III
p. 95	No. 135, VA 617	E.D. III
p. 96	No. 136, VA 3978	E.D. III
p. 96	No. 141, VA 530	E.D. III
p. 97	No. 157, VA 3866	Akkadian
p. 99	No. 173, VA 2117	Akkadian
p. 100	No. 191, VA 588	Akkadian
p. 102	No. 213, VA 605	Isin Larsa ?
p. 102	No. 217, VA 1623	Akkadian
p. 105	No. 243, VA 3605	Akkadian
p. 105	No. 248, VA 7971	Guti ?
p. 106	No. 254, VA 3113	Isin Larsa
p. 106	No. 257, VA 546	Old Babylonian
p. 107	No. 265, VA 3883	Ur III
p. 110	No. 288, VA 814	Old Babylonian
p. 110	No. 295, VA 815	Old Babylonian
p. 112	No. 310, VA 2072	Ur III
p. 112	No. 316, VA 3253	Old Babylonian
p. 130	No. 506, VA 5364	Old Assyrian, from Ashur
p. 130	No. 507, VA 5800	Old Assyrian, from Ashur
p. 130	No. 508, VA 5368	Old Assyrian, from Ashur
p. 135	No. 556, VA 6935	Kassite, from Babylon
p. 138	No. 586, VA Ass.1129	Middle Assyrian
p. 151	No. 752, VA 2111	Neo-Assyrian
p. 152	No. 771, VA 4291	Persian ?, from Toprak- kale

The following are listed under "Miscellaneous" in the Chart

A.J. Tobler, Excavations at Tepe Gawra, Vol. II.

p. 189, Pl. CLXIX, no. 167. G.7-205 Gawra XIII or Late Ubaid

E. Heinrich, Kleinfunde aus den Archaischen Tempelschichten in Uruk

√p. 28, Pl. 17 a      W.14772c1      Uruk IV, see Berlin  
p. 29, Pl. 17 b      W.14766f      Jemdat Nasr

Jean Nougayrol, "Documents du Habur, Le Sceau de Daguna", Syria XXXVII, pp. 209-14.

Fig. 2      The seal of Daguna      Akkadian

L. Legrain, The Culture of the Babylonians from their seals in the Collection of the Museum, P.B.S. XIV.

p. 171, Pl. V	no. 53, CBS 14296	Jemdat Nasr
p. 171, Pl. V	no. 55, CBS 14463	Jemdat Nasr
p. 173, Pl. VI	no. 67, CBS 1113	E.D. III
p. 176, Pl. VII	no. 82, CBS 1088	Akkadian
p. 177, Pl. VII	no. 93, CBS 1115	Akkadian ?
p. 179, Pl. VIII	no. 112, CBS 1114	E.D. III
p. 180, Pl. IX	no. 126, CBS 14373	Post-Akkadian
p. 204, Pl. XV	no. 214, CBS 8990	Isin-Larsa
p. 224, Pl. XVII	no. 264, CBS 1027	?
p. 233, Pl. XIX	no. 300, CBS 7309	Old Babylonian
p. 236, Pl. XX	no. 313, CBS 5462	Old Babylonian
p. 260, Pl. XXIII	no. 406, CBS 1035	?
p. 261, Pl. XXIV	no. 410, CBS 8928	?
p. 322, Pl. XXXIV	no. 713, CBS 5475	Neo-Babylonian
✓ p. 329, Pl. XXXV	no. 794, CBS 9405	Indianesque

Elie Borowski, Cylindres et Cachets Orientaux conservées dans les Collections Suisses, Artibus Asiae Supplement III

p. 164, no. 20	Genève 12686	E.D. III
✓ p. 173, no. 36	Schmidt 10	Isin Larsa

E. Platon, "Oriental Seals from the Palace of Cadmus: Unique discoveries in Boeotian Thebes", I.L.N. of 28, xi, 64.

About 30 seals of Kassite and contemporary Near Eastern times of lapis lazuli - some nine others.

E. Parker, "Seals and Seal Impressions from the Nimrud Excavations, 1955-58", Iraq XXIV, p. 31.

p. 31, Pl. XII, no. 1	ND. 5345	Ninth to Seventh Centuries
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Not included in Chart

L. Legrain, Catalogue des Cylindres Orientaux de la Collection Louis Cugnin

p. 25, Pl. III, no. 35	Post-Akk. to Old Babylonian.
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J. Nougayrol, Cylindres Sceaux et Empreintes de Cylindres trouvées en Palestine.

p. 39, Pl. VII, no. LXXXII, from Beth-Shan	Br. III
p. 40, Pl. VII, no. LXXXIII, Beth-Shemesh	Br. III ?
p. 52, Pl. VII, no. CV. from Beth-Shan	Br. III
p. 55, Pl. XI, no. CXIII, from Tell Gerar	26th Dynasty

A P P E N D I X C

SEAL DISTRIBUTION CHART

	L. Ubaid and Uruk	Jemdat Nasr	E.D. I	E.D. II	E.D. III	Akk.	Post Akk.	Isin Larsa	Old Bab.	Kassite & M.Ass.	Neo-Ass. ⑨ - ⑦	Neo-Bab.	Persian
C.A.N.E.S. I				1	14	7	6	1	6	1	3	4	
Strat. Cyl. Seals from The Diyala		2			3	5		3	1				
Collection Mrs. Brett		6			4				1		1	1	
Collection Mr. Newell		1			4	1	1		2	1	2		1
Collection Mrs. Moore					3	3			1				
Walters Art Gallery					2	3		1	1				
Ur, Royal Cemetery. U.E. II		14		2	45	40	21						
Ur, Seal Cylinders. U.E. X		5		1	3	11	5	1	5				
British Museum		2		2	21	6	6	2	2	1	2	1	1
Ashmolean Museum		21		1	2	1	2			1	2		2
Musée du Louvre		3		2	2	12	3	2	6	2	2	2	
Bibliothèque Nationale								21	3		1		
Berlin Museum	1				12	6	3	2	7	2	1		1
Miscellaneous	1	3			3	3	1	1		30	1	1	
T O T A L	2	37	0	9	118	93	48	14	35	38	15	9	5