

THE URBAN GEOGRAPHY OF BAGHDAD

VOLUME I

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PART I

CHAPTER 1

Introduction: Purpose and Conceptual Approach of the Investigation

Functionally and morphologically the geographical reality of a town is the result of the interplay of socio-economic factors under the influence of their regional and historical contexts. Function is the decisive element in fashioning the overall pattern of the city. It nearly always finds expression in one or other of the townscape elements. This physical expression, whether shown in the street system or in the building type, is constantly changing. The scale, nature and timing of such changes and modifications are determined by the socio-economic factors and technological development in each phase of the city's growth. Functional changes influence both traditional and modern forms and their readjustment in relation to other constituent elements of the townscape. This dynamism and its results is one of the special concerns of this study where new forms are always emerging. The processes of development such as peripheral land use expansion, and the decline and replacement of buildings in the central area are good examples of the physical changes of the Arab city.

The unique character of Baghdad has been moulded and re-moulded by a succession of formative processes. Baghdad's history shows that the city was either receding or growing internally and within its zones of influence. Its expression and regeneration, no matter how chaotic, is proof of its dynamic vitality. New transformative development in the centre refashions the form of Baghdad and here modifications to the existing structure such as remodelling, replacement, or taking land out of use influence its

present and future growth. These internal stresses and strains influence urban formation² and in this role increasingly affect and change the existing pattern. This no doubt has helped greatly in fashioning the internal and external morphology of the city, giving indications of the stage of socio-economic development reached by Baghdad's society in each historical period.

The new peripheral expansion experienced by the city takes the form of accretions either contiguous or dispersed. This has resulted in striking contrasts in the overall physiognomy of Baghdad, expressing the differences between the traditional Arab and modern ways of life. These changes have happened either gradually or abruptly, mainly in the last two morphological phases of the city, i.e. after 1936. The town-plan elements of Baghdad indicate such sequential development and its vigour is maximized in the centre owing to the economic pressure promoted by the degree of accessibility, but also on the periphery where many new functions can find sufficiently cheap space to accommodate themselves.

The application of this general approach perhaps will contribute to the study of urban Geography in the Arab world. This springs from the fact that none of the Iraqi towns or indeed most of the other Arab towns have not yet been studied in such a way as to give formative processes a high priority. However, the understanding of spatial character and the processes determining its forms and patterns, rather than the method is the ultimate purpose of this study. Although Baghdad exhibits generally significant or monothetic features that are found in other towns, to yield various elements of a general theory in urban geography, yet inevitably it has its own idiographic

character. As a spatial reality in a particular region made by a particular society and under particular socio-economic and historical circumstances, Baghdad maintained its own individualization within urban geography. This individual make-up is expressed in locational patterns and formative processes existing in the intra-city limits which represent peculiar elements needing a particular urban approach. This may help to explain the double-sided case of Baghdad as a typical Arab city, yet one hybridized by modern westernization. Indeed it applies to many other Middle Eastern towns.

Because of its function as the country's administrative Capital, as well as the economic and cultural centre of a wider region, leading to its exceptional size, Baghdad epitomizes the Arab city in modern times. This is in spite of the fact that each of the Arab towns has its own peculiar morphological characteristics. Baghdad reflects the stresses and contradictions of present-day Arab life. It mirrors Arab history and heritage, as well as the Arab's present state of affairs. It reflects his strong and not so strong points and his search, often frenzied and disordered, for a place under the sun. The richness of Baghdad which displays most of the peculiar and often unⁿinvestigated characteristics of the Arab town, may add to the field of urban geography in the Arab World.

The spatial relationships between the Arab individual and the functional forms among which he moves such as bazaar or coffeehouse, and also the meaning to him of family, neighbourhood as well as his relationship to government, is quite different from that existing in the Western World. Furthermore, time and space have different

meaning in the Arab world ~~from~~ that known in the West. Therefore the way of using them is different. This naturally has led to the creation of particular areal differentiations characteristic of towns in Arab culture. The series of formative processes which has put its stamp on the morphology of the Arab town also have been determined by the Arab character of Baghdad's society. The interplay of such social and physical factors can be understood perhaps more lucidly if studied by an Arab individual familiar with such regional and cultural differentiations. Although Baghdad has been subject to more than six centuries of foreign rule, which has arrested its development and evolution, the city still maintains its Arab character.

Arab towns have unique features imprinted on their urban fabric. This makes the Arab city as distinctive an urban type as the Medieval European, the Chinese or Indian towns. Though they might be thousands of kilometres apart and experience extremes of climatic conditions, there is a unity and similarity in the Arab cities that makes them unmistakably Arab. The unifying elements are many. Some of them, the object of this study, may help to visualize the anatomy of the Arab city elsewhere. The mahallah (town-quarter), the mosque, the bazaar, the courtyard house, the hammam (public bath) and gahwah (coffee house) are all features lending a special character to the traditional Arab city. These perhaps have not been studied since the time of Ibn Khaldun (14 - 15th century), who was the first urbanist, sociologist and urban geographer in a modern sense of the word.

The morphology of the traditional Arab town requires intensive study and the case study of Baghdad can shed light on the anatomy of the Arab town.

In its modern development Baghdad is no less interesting as it represents in many ways towns of the Third World particularly those subjected to colonial or quasi-colonial control. All the modern technological developments influencing the city's growth are foreign. Baghdad is a unique case of uncontrolled, very fast and in many respects unhealthy expansion that perhaps represents the recent unguided growth experienced by most Arab capitals. The analysis of such growth is a major element in the field of Arab urban geography that should not be ignored.

The present expansion, whether caused by ease of mobility, change in the social principles of life, population growth or by industrial development, has generated particularly acute problems not experienced by advanced countries. This indeed furnishes a wide field of further urban study which will elucidate many obscure urban phenomena characteristic of the Third World. Owing to Baghdad's disorganized modern growth the identity of the city already partly destroyed by the modern machine. Frantically modernizing authorities in Baghdad have destroyed the city for the sake of Western technological innovations, ruthlessly segmenting it by many straight break-through streets. When Baghdad was "hit" by this particular aspect of westernization, form changed much faster than the evolution of the society. In this way the physiognomy of the city is changing with astonishing speed. Much of the unity of traditional Baghdad has been destroyed and

this study will show how Baghdad has been "raped" by insensitive Arab and foreign hands.

The study attempts to demonstrate how far the old characteristic elements of the Arab city have resisted change, have been modified or have declined owing to functional, technological and social changes. Most of the forms, and the spatial arrangement of component elements of the Arab city are not yet understood. The study aims to discover how Baghdad has survived and thrived. Why do its inhabitants cling so tenaciously to this location? Why has it exploded in its spurt of unguided modern growth? Why has it been subject to the painful blows of a million bulldozer-hours of work. How does it react to diverse combinations of physical and human determinants? The explanation of the complex active relationships in the intracity space at all scales of human association is a major purpose of this study.

Unfortunately, the Arab of today has drawn little inspiration from his heritage in expanding his city, controlling it and designing its buildings. It is important to trace the impact of politics, commerce and particularly oil on Baghdad as an example of an Arab city which fell victim to untrammelled forces of speculation and exploitation. The Arab city, instead of existing for man has become a city for the car. This study aims to examine how far Baghdad demonstrates the planning, architectural and cultural crises facing the Arab city of today.

The magnitude of destruction done to the traditional parts of the city adds another purpose to the study, that of warning other Arab towns that selective conservation of the cultural

heritage should be recognized as one important claim on town and country planning.

If traditional parts are not maintained, Baghdad is in danger of losing its own character and even its own identity. Arab culture in Baghdad and many other Arab cities has had to surrender to the impact of misunderstood conceptions of civilization. This has influenced the essential organic simplicity of the Arab town which can only be understood in relation to the function which it was initially created to perform.

When substituting the old by the new, the latter must be better. In the case of town planning "better" must not be confused merely with technical efficiency, and less so in a purely Western sense, but must include social and cultural values of the society for which town planning is being done.

(Baghdad has evolved in the last three decades from a closely knit, organic and typically Arab city that was inwardly orientated to an outwardly orientated type of cosmopolitan city.) A city that only three decades ago was made up of Arab mahallahs today has by contrast numerous modern neighbourhoods, and has mushroomed into a city of about two million people. A city which gathers today the extreme forms of socialism, democracy and capitalism is particularly distinctive both in the Arab world and throughout the world. What took Europe over fifteen decades to achieve under the impact of industrial revolution has taken Baghdad and many other Arab towns only one to three decades under the impact of oil exploitation, technological development and land speculation.

This wild and quick growth of the city has led to the emergence of new forms peculiar to Arab underdeveloped countries. These forms will reflect characteristic political and economic conditions not found in the developed world.

To give some examples the wild sarifah (reed mat hut) and kukh (mud hut) shanty towns is one of Baghdad's modern sinister features. They are very characteristic of many countries of the Third World. Studying such phenomenon will introduce some new aspects to Arab urban geography.

In its modern development Baghdad provides another peculiar phenomenon, namely the governmental residential suburbs. The government has deliberately created new social segregation. The new social stratification depends on the relative economic and professional status of the occupants. Particular professional groups are housed on particular sites. This is in/complete contrast to the naturally developed traditional residential mahallah.

It meant that new social problems have been created which need particular attention. These new problems are the consequence of the present 'modern' urbanization of a developing country, a phenomenon not observed in the advanced countries.

Urban geography here can help to comprehend the relevant problems and thus provide a new dimension to its work. In this sense too the present investigation helps to offer wider application to the study of Arab towns. In common with most other Arab towns Baghdad has had no detailed urban study. Almost all that has been written about Baghdad is historical. Historians have primarily dealt with the social life of Baghdad's past, particularly

that related to the Caliphs and political leaders. This together with the lack of documents relating to both past and present has left Baghdad without any reliable, including statistical, information. In comparison, most European towns have statistical information and have already been the subject to various kinds of investigations. Recently three firms of foreign town-planning consultants have been investigating Baghdad. These people have attempted to do town-planning without adequate research on the social and economic structure of the city. They have not studied local society and legislation. The intimate relationship between function and form was overlooked.

In practice, there has been no participation of local bodies, whether citizens or authorities, in the elaboration of these plans. This means that the plans have been imposed from the top without any comprehensive study of the city, which should serve its own society. In these circumstances none of these plans can in fact be implemented. However, some useful information has been accumulated during the preparation of these plans and will be referred to where relevant.

In addition to the crucial lack of basic data urban geography in the Arab World has evolved no general theoretical framework appropriate to the characteristics peculiar to Arab towns.

Most studies written about Middle Eastern towns have dealt with Iranian towns. These studies are valuable in shedding light on the Moslem town. However, though Iranian towns are Islamized they are not strictly Arab in any full social and historic sense. There are differences between Arab and Persian society and culture with

consequent differences in the respective townscapes. Clearly urban society provides the essential context on which all other processes depend.

Unfortunately, most of the Arab geographers have dealt with separate aspects of the town. This indicates the absence of a theoretical frame by which the Arab town can be approached.

Baghdad can be studied in terms of various systematic approaches, i.e. the functional, the historical or the morphological. A geographical study of Baghdad can also emphasize various systematic viewpoints such as the central-place aspect.

Owing to the absence of more specialized investigations on these lines the city has been studied in the present investigation in terms of a general urban geography, but with considerable emphasis on its morphological aspects. Urban morphology has received little if any attention in the Arab geographical literature. It is in any case a relatively neglected aspect in current urban geography. Yet to ignore it, is to ignore the physical reality of the town itself.

The study will include various aspects of the city. Thus residential growth, migration, industrial development, transportation and commercial land uses are dealt with to explain the recent uncontrolled growth of the city.

To provide an elucidation of the formative processes fashioning the city, the study has drawn upon several related disciplines such as architecture, hydrology, sociology, history, political science, economics etc. In some ways there is an overlap between the approaches of these fields. Urban geography is interested in the

differentiation of various functional areas within the city, in social organization and in the expression of these functional aspects in corresponding physical forms and patterns that give urban space its particular character.

The unguided growth, destruction and haphazard locational patterns of land uses in Baghdad, as in many other Arab towns, result largely from the neglect of the geographical structure of local society by planners in their investigations. This geographical structure is no doubt one of the major fundamentals of urban geography upon which planning decisions should be based.

All planning takes place in a spatial frame whether within the city or without. Baghdad like any other town is a field of planning operation. Urban geography, particularly in the Third World, can be more than useful in regional and town planning and in the long term development of the region.

Too often planners in the Arab world underestimate spatial factors and the way in which different elements interplay. Planners have jumped to the future overlooking all too frequently the past and the present. Yet these two aspects do form the basis of future development.

Urban geography has the methods and techniques applicable to the examination of evolving problems in any urban society. Yet so far Arab geographers have not taken part in any kind of social or civic planning. Planning as an operation is too difficult to be run by a single specialist, in Iraq's case, the engineer. It calls for the participation of a group of specialists, which may be led by any intelligent and gifted person of the group.

The possibility of using urban geography in town and regional

planning should not be detrimental to the subject since the connection will develop and advance the field of urban geography rather than deflecting it from its own appropriate philosophy.

By understanding the very complicated social and functional interrelationships in the intra-city space, urban geography may successfully help in improving the urban environment and attaining a better urban way of life in Arab towns. Guiding a mushrooming city such as Baghdad in this way brings the field of urban geography in the Third World to more immediate practical application. To be able to participate in planning decisions in conditions where documental and statistical information is inadequate, urban geography in the Arab towns should be based much more firmly on fieldwork.

The nature of field investigation is determined by the kind of study and the information required.

In this study fieldwork has proved very necessary in elucidating the interrelationship between functions and patterns. These interrelationships provide a significant field of genetic analysis rendering the understanding of forms gained in the investigation of one representative example applicable to the study of other Arab towns. The scope and method done for this investigation is explained in Appendix A.

In any Arab town building fabric and street system yield perhaps more information than most of the ancient documents. They mirror the interrelation between the socio-economic and technological factors influencing the city evolution. Therefore, the current study considers the townscape elements as the major criteria in

comprehending and analysing the development of the city.

Four house types and three broad types of street system have been recognized in Baghdad. They have helped significantly in understanding the transformation taking place in any of the townscape elements. Only by this method which depends almost totally on field investigation, has it been possible to recognize that as a historical Arab city Baghdad has distinct morphological phases.

Houses of the second phase for example cannot be found in any of the other periods, providing thus a reliable method to follow the evolution of the townscape.

In the investigation of any large city the recognition of morphological phases is of great importance. This principle of morphological phasing may be applied to many other Arab towns. Morphological phases naturally reflect the cultural history of the town concerned.

"When one period has achieved the manifestation of its own requirements in the urban pattern of land use, streets, plots and buildings, another supersedes it in turn, and the built-up area, in its functional organization as well as in its townscape, becomes the accumulated record of the town's development."1 This means that the investigator must be armed with efficient historical, economic and political knowledge of the region in which the city is located. It is pertinent to point out here that the processes of change and replacement occurring in the preceding periods should not be overlooked in urban investigation.

Each morphological phase expresses itself in the town plan as well as the building types created by particular needs and dynamic

impacts of society in any particular stage of its cultural evolution.

A townscape represents the physical manifestation of social and functional aspects of urban geography through time.

The morphological side of this study has been stimulated by the absence of similar studies in Iraq ^{and} by the theoretical approach in the morphological work recently done by M.R.G. Conzen in Alnwick and Newcastle upon Tyne.² The implementation of this approach in studying Baghdad depends primarily on the nature of field work.

Though the social, historical, economic, climatic and technological context of English towns is quite different from that of Baghdad, research experience has shown how relevant the general theoretical approach is to the case under investigation. One aspect, strikingly applicable, is the concept of the fringe-belt, which links functional and morphological aspects together in a credible scheme of development.

It is interesting that although Baghdad has its own developmental processes both in the centre and the periphery, the general genitival approach demonstrated in the case of those two English towns guided by careful observation of the details peculiar to Baghdad as an Arab town has helped in tracing the latter's fringe-belt and its evolutionary processes.

It is suggested that the recognition of fringe-belt growth is an important aspect for the Arab urban geography and its associated morphological studies.

In the light of this discussion much of the terminology used in Conzen's work has been adopted in this study, retaining its basic meaning, but recognising the variations arising from the very different context of the Arab case.

The theoretical framework of a fringe-belt arranged round its fixation line is very well demonstrated in the case of Baghdad, firstly associated with the medieval wall and more recently with the city dyke. The evolutionary processes within the intra- and extramural limits of fringe-belts, typified by repletion in the former and accretion in the latter, are distinctive features in Baghdad's morphological dynamism. Though it is much bigger than the two English towns mentioned earlier, Baghdad portrays surprising similarity of some basic principles of developmental change.

Furthermore, it is safe to state that the theoretical approach associated with the fringe-belt concept can be observed in most of the Mesopotamia's large towns particularly those built before the nineteenth century.

As in the case of many other towns the geographical reality of the fringe-belt as an urban phenomenon and its structural forms in Baghdad is determined by economic, social and physical factors within a regional context. Morphologically, these factors mirror the whole spectrum of social necessity, functional significance and geographical setting of the tributary region over a certain period of time.

The components of Baghdad's townscape, i.e. town-plan, building fabric and land uses react perhaps in somewhat similar ways but with different speed to functional and physical factors impinging on them as compared with those observed in European towns. Thus in Baghdad observation frequently shows that more than one function can be housed in the same building, whether simultaneously or successively. Buildings may thus be said to have a resistance to physical change

but not to the same extent as the town-plan, which indicates the evolutionary processes of the city's townscape.

- 1 M.R.G. Conzen, Alnwick, Northumberland, A study in Town-plan Analysis, I.B.G., Publ. 27.; (1960)6.
- 2 Conzen, op. cit., (1960), M.R.G. Conzen, The Plan Analysis of an English City Centre, Printed in Proceedings of I.G.U. Symposium in Urban Geography, Lund, ed. by K. Nyvborg, Lund, (1962), pp. 383 - 414.

P A R T II

The Geographical Setting of

Baghdad

16/

CHAPTER 2.

Baghdad's Situation in its historical
context

Baghdad was founded to fulfil the role of an Arab capital, and was not born by chance. Made by men and for men, it was placed where armies, caravans, men and goods can easily meet. Such was the case with Baghdad, one of the most historic cities of Iraq and though it looks back on a development of more than twelve hundred years Baghdad reveals its metropolitan past and uniqueness by its internal pattern and physical arrangement. In order to explain its location, it is necessary to look at its geographical setting in relation to the whole ancient world, ^EEurasia and Africa, in the middle of which Baghdad stands. It is only within this context, which may at first sight seem exaggerated, that Baghdad finds its full significance.

The physical setting i.e. site and situation of any settlement is constantly changing. Physiographic forms can never be thought as finished products.¹

The site is the piece of land on which a city rests, develops and actually occupies, while the situation of the city covers a wider region within which the city interacts.

The human potential of the region, degree of centrality of the town and its accessibility, are the major elements of situation. In the course of development Baghdad's urban morphology has been influenced by the changes in the city's situation. Urban growth is not necessarily a simple cumulative process. During its evolution Baghdad experienced periods of growth, stagnation and decline. This was caused by physical and human factors. Layout and physical structure of the city have been influenced and shaped by these factors in

various ways.

Physical factors are represented by floods, sedimentation and the shifting of river courses (Fig. 2.11^b). Human factors on the other hand, are shown in the frequent wars, socio-economic development and technological changes.

The geographical setting of Baghdad, which gathers the city's physical aspects and their effects on its growth as well as Iraq's urban hierarchy, will be discussed in this part.

Baghdad's Situation.

The importance of Iraq's geographical situation has been obvious since Alexander's armies linked Europe with India twenty-two centuries ago. Through Iraq ran not only the shortest but the easiest routes from Europe to the Arabian Gulf* and India, until the discovery of the Cape Route. From the time of the Babylonian Empire the trade of the Far East tended to pass through Iraq to the Levant ports on the Mediterranean. The importance of an effective situation such as that of Baghdad is reflected in the emergence of many urban settlements all of which were centres for traffic concentration. The first city of Baghdad was developed as an oasis city, irrigated entirely by rivers, of which the Tigris is the main. The Tigris and Euphrates rivers have induced concentration of routes on Baghdad's site where they can be crossed fairly easily at the 'waist of Mesopotamia'. The waist is where the Tigris and Euphrates run nearest to one another. The land between the two rivers at this

* Arabian Gulf is the term used in Iraq and the other Arabian countries, known in Europe as the Persian Gulf.

point has attracted many urban and rural settlements, in the various stages of the historical development of the area.

Modern Baghdad, unlike its Arab predecessor, Al-Mansur's "Round City",* lies on both banks of the Tigris river some 630 kms from the mouth of Shatt al-Arab and 650 kms from Basrah, which to all intents and purposes is its port.² Within Mesopotamia's alluvial plain Baghdad commands the most strategic site in the country which helps to explain its vigorous urban development compared with other towns in the country.

Since its early foundation, Baghdad has occupied a unique position, reflecting the importance of its situation in the country. Its importance derives from its water front, crossroads position and position within a relatively densely populated area (Fig. 2.2). It is the window through which Iraq and the Arab World looks to, and in touch with, foreign nations from the North and East. Baghdad has an obvious central position in Iraq. It is about 325 kms from the Syrian border, 460 kms from the Jordanian border, 586 kms from the Turkish border and 169 kms from the Iranian border. The relative stability of this central position of Baghdad has supported the situational importance, from which it derives its function as a capital.

The geographical advantages of Baghdad's site and situation were thus taken into consideration during the founding of the city as an imperial capital in 762 A.D. (145 A.H.)**

* Al-Mansur is the founder of the city of Baghdad. He is the second Abbasid Caliph.

** Dates in brackets refer to the Arab system of dating which takes its origin from Hijrah, the flight of the Prophet Muhammad from Mecca on 16th July 622 A.D.

Fig.21b The Iraqi Liwas

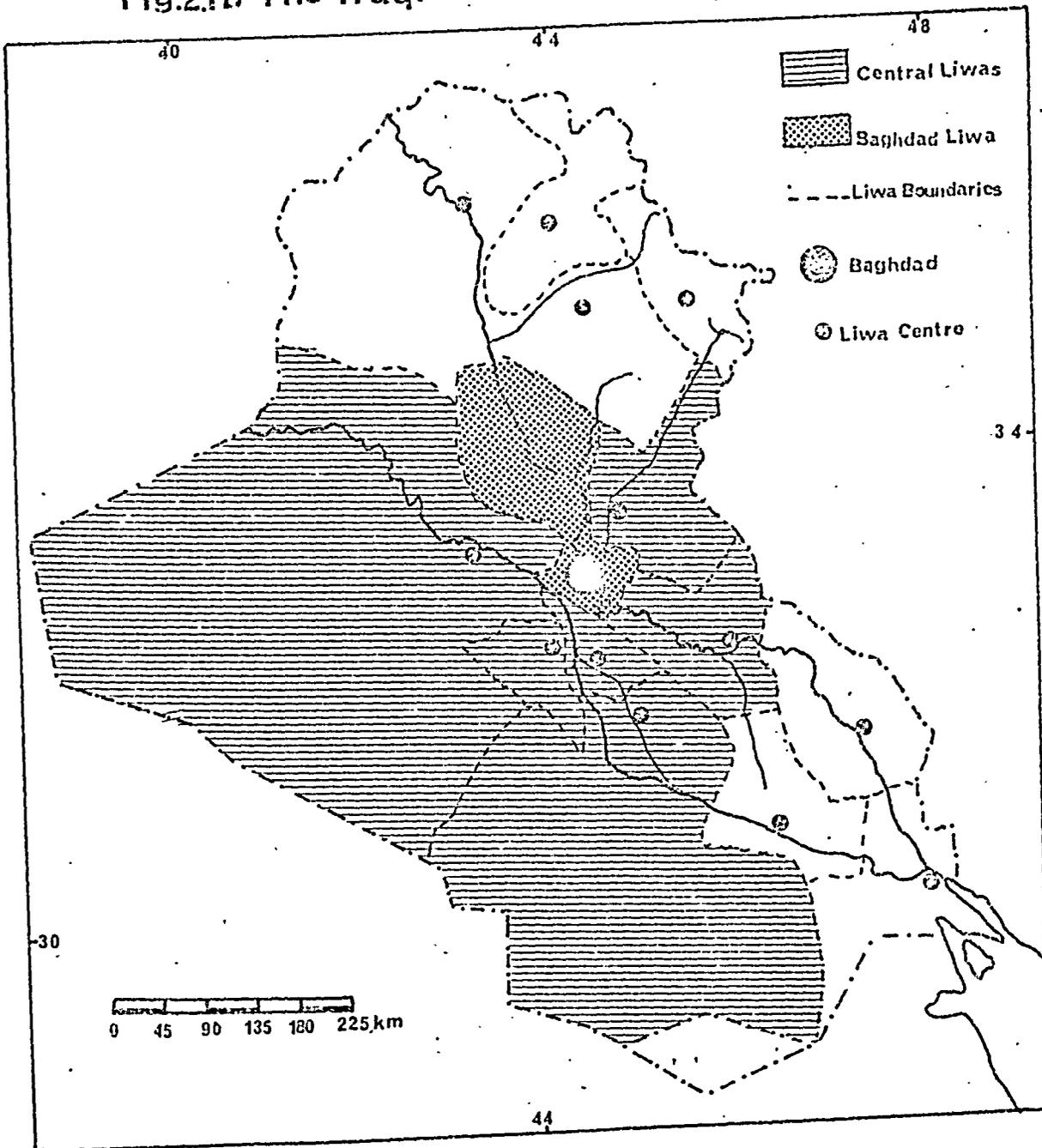
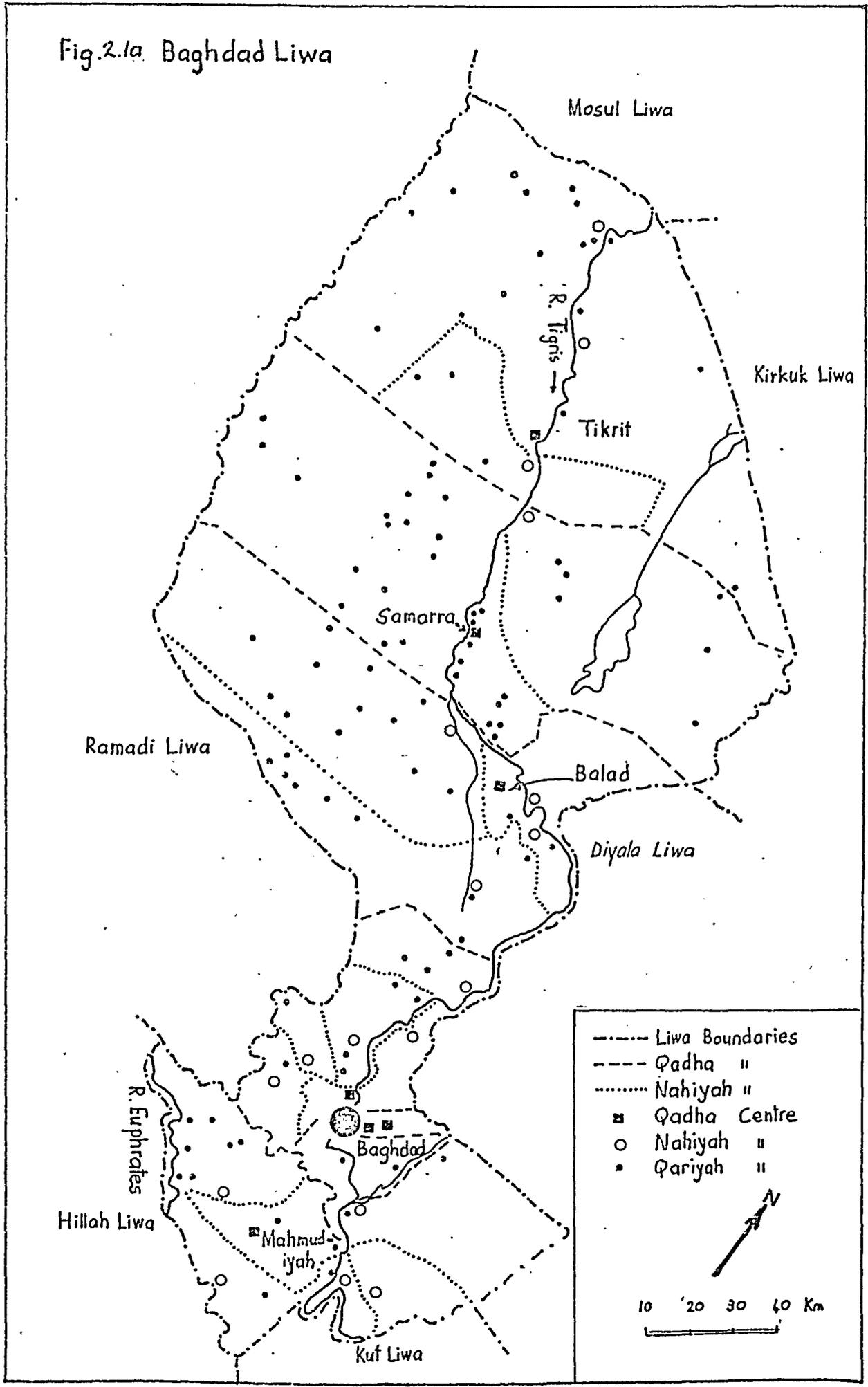


Fig. 2.1a. Baghdad Liwa



- - - - Liwa Boundaries
 - - - - Qadha "
 ····· Nahiyah "
 ■ Qadha Centre
 ○ Nahiyah "
 ● Qariyah "
 10 20 30 40 Km
 ↑ N

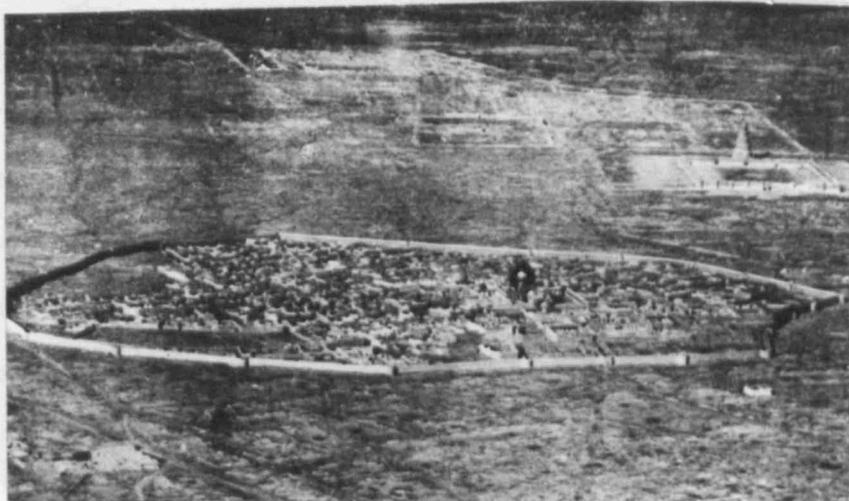
Baghdad today is not at the centre site of its Liwa (Fig. 2.1,a,b,) It is situated some 40 kms from the boundaries of Ramadi Liwa, 200 kms from the provincial boundaries of Mosul and only 15 kms from the boundaries of Diyala Liwa. The latter boundaries are not far from the built-up area of the capital. Hence new administrative divisions are very much needed for a rational modern development of Baghdad. Moreover, the new Amanat al-Asimah (the municipality of the capital) boundaries cover some territories belonging to other administrative units within Baghdad Liwa, such as Abu-Ghraib, Mahmudiyah, and others, which consequently make it difficult to obtain comparable census data of Baghdad. The expansion of both, the built-up areas and the municipal boundaries, reflect the successive stages of the situational and functional development of the city.

Furthermore, Baghdad has political and administrative centrality. This has been associated with Baghdad's positive and negative historical phases. In its history, Baghdad remained either a state capital or a provincial capital. Baghdad has been influenced by its regional and international context. This can also be seen in the earlier cities of central Iraq, all of them emphasizing the great importance of that situation. All those earlier centres have benefited to a large extent from the situation before and after the advent of Islam in Mesopotamia. Its vast plain and fertility sustained its centripetal attraction for many urban settlements. Man participated in the physical factors in founding and developing alternative sites in Baghdad's situation. The interests of leaders or kings in those days had their own role in choosing and building

Fig. 2.4



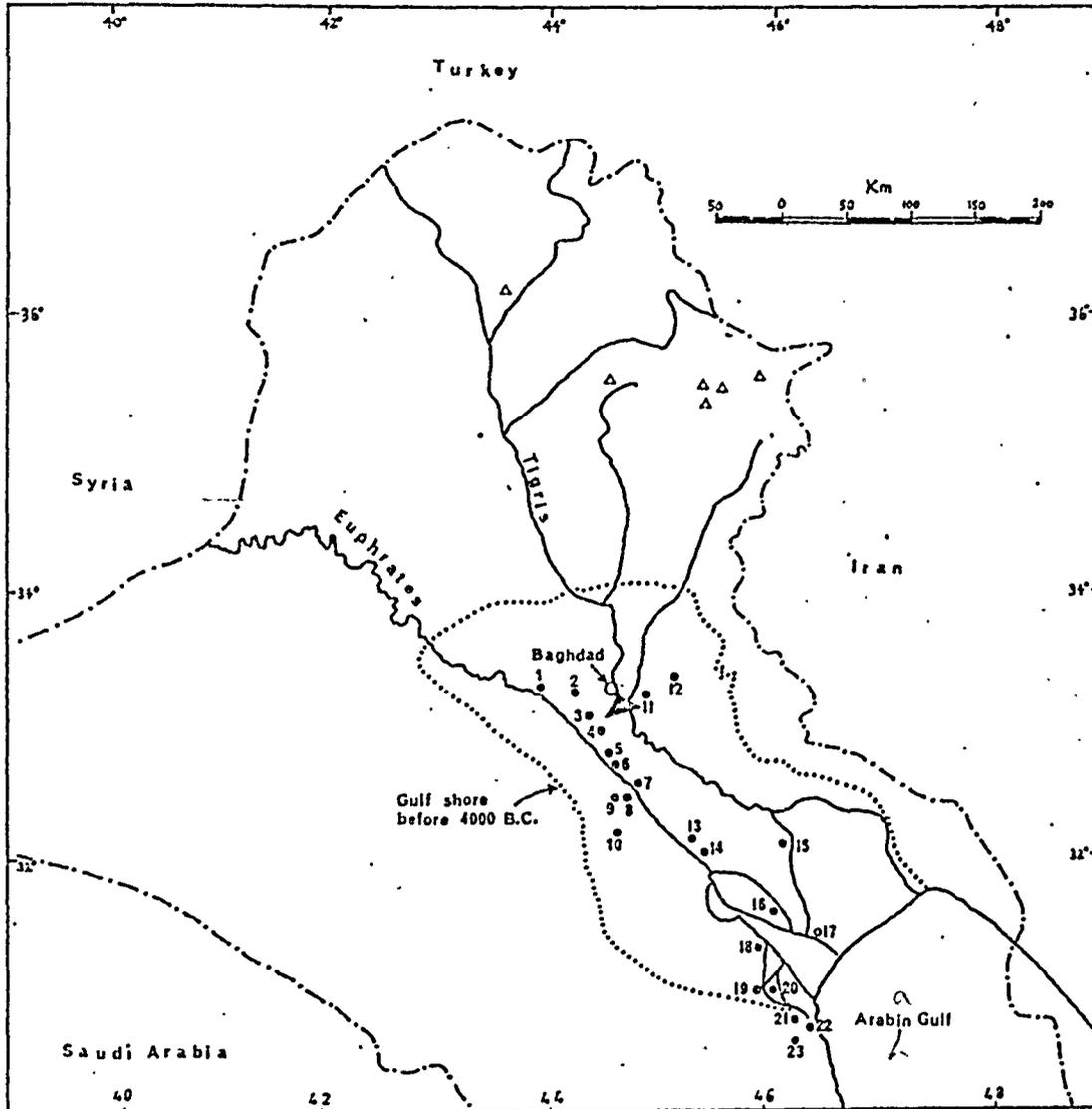
a. Tel Harmal



b. Samarra

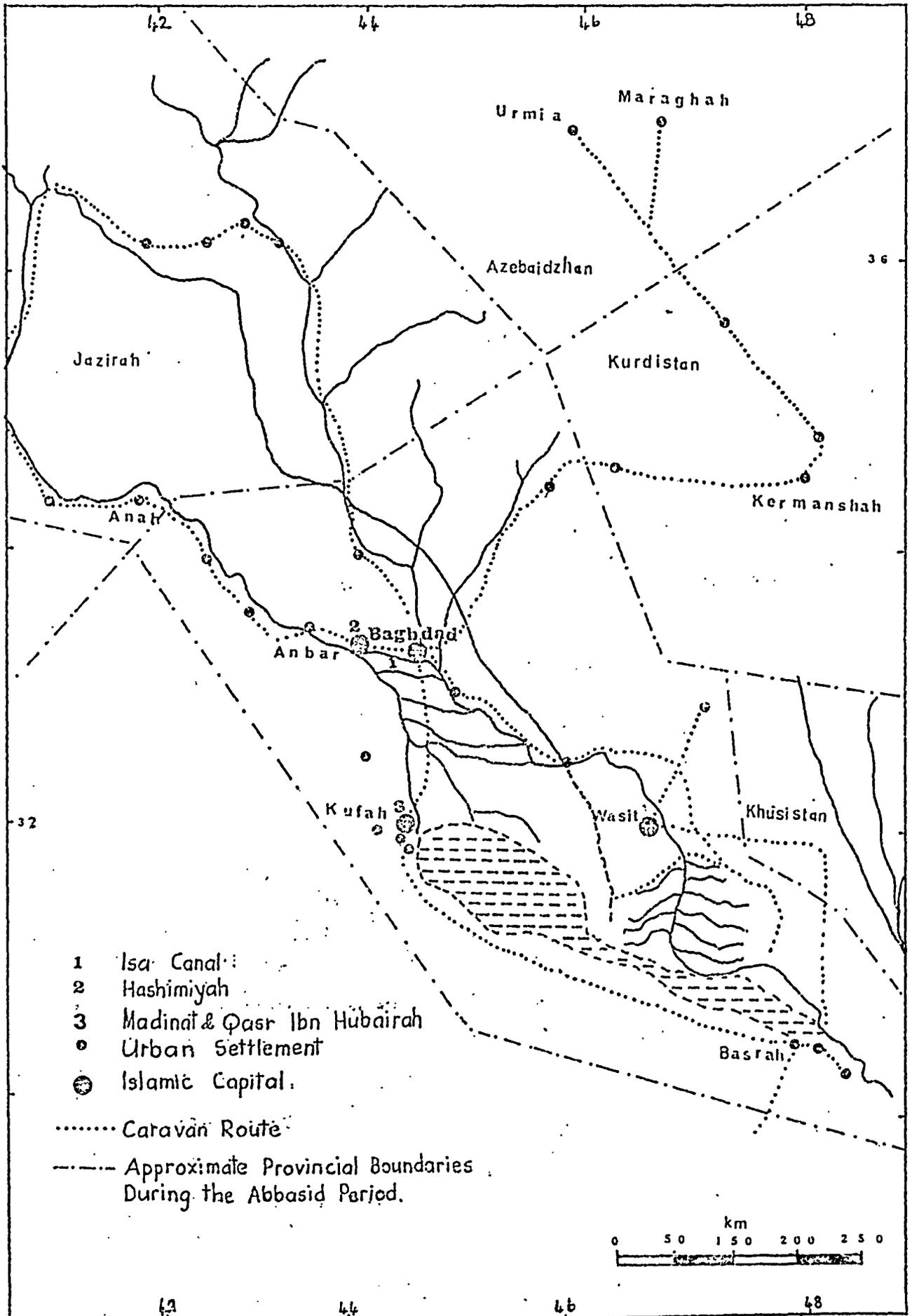
SOME PRE-ISLAMIC URBAN SETTLEMENTS IN MESOPOTAMIA (AFTER SUSA)

Fig.2.3



- | | | | |
|----|----------------------|----|------------------|
| 1 | AL Anbar | 13 | Issin |
| 2 | Dur-Kurigalzu | 14 | Nippur |
| 3 | Aged | 15 | Larak |
| 4 | Sippar | 16 | Uma (Gokha) |
| 5 | AL 'Aglr | 17 | Lakash |
| 6 | Kutha | 18 | Sharubak (Farah) |
| 7 | Jumdet Nasr | 19 | Uruk (Warka) |
| 8 | Kish | 20 | Lahrissa |
| 9 | Babylon | 21 | Tel-Ubaid |
| 10 | Borsiba | 22 | Ur (AL-Muqalgar) |
| 11 | Khufajah | 23 | Eridu |
| 12 | Tel Asmar (Ashnonah) | | |
- ▲ Seleucia, Ctesiphon and Tel Harmal △ Historical site
 ○ Modern Baghdad

Fig.2.2 Islamic Urban Settlements



the settlement, e.g. the movement al-Saffah the first Abbasid Caliph from Hashimiyat al-Kufah towards al-Anbar, where he built al-Hashimiyah as a new Abbasid capital.³ Al-Saffah moved just because Hashimiyat al-Kufah was not associated with his name. It was named after Ibn Hubairah, the Umayyad leader. Its relics today are near the recent town of Fallujah (Fig. 2.2)

Most of those urban settlements whether pre-Islamic or Islamic were sited within an area of some 120 kms north of Baghdad, 150 kms south and south-east and not more than 65 kms from both east and west of the city. Pre-Islamic and Islamic urban Settlements may be discussed briefly as follows:(Figs.2.2,2.3)

Babylon or Babil, the capital of Babylonia, built around its great temples and royal palaces, is mentioned as far back as 2350 B.C. as an urban settlement of considerable size. One important period in its existence was that of the reigns of Hammurabi and Nebuchadnezzar. The city was frequently destroyed by raids and invasions. The ruins now on the site date back to the death at Babylon of Alexander the Great, 323 B.C., when the city was finally abandoned.⁴

Tel Harmal one of the small mounds in South-Eastern Baghdad, 8 kms east of the city centre, was some kind of provincial capital within the city state of Eshnunna and was excavated in 1949. It was an important administrative centre and the flourishing period of the town was in the last period of the Kingdom's independence. This was put to an end by the conquest of the country by Hammurabi of Babylon in the thirty second year of his reign (Fig. 2.4)

Fig. 2.5



a. Durkurigalzu (Agerguf)



b. Ctesiphon Arch (Tag Kisra)

Dur-Kurigalzu is called locally A'gerguf or Tel A'gerguf. It was a Kassite city established by Kurigalzu the King in the beginning of the 15th century B.C.⁵ The relics of this city are in need of further excavation. It lies 8 kms north west of Baghdad (Fig. 2.5a) Seleucia was founded by Seleucus I Nicator in the 3rd century B.C. It is situated on the right bank of the Tigris, some 32 kms south of Baghdad and opposite to Ctesiphon. Its ruins are now known as Tel Umran.⁶ It played the role of the eastern capital of the Seleucid Empire. Ctesiphon is situated some 32 kms south-east of Baghdad, 2 kms south of the confluence of Diyala, the Southernmost tributary of the Tigris. It had been named Ctesiphon by the Greeks. In 150 B.C. it became the winter capital of the Parthian Kings, who were replaced by the Sassanids. It was known as al-Madain by the Arabs. It is situated on the main road which connects Roman Syria to the west with the Parthian territories to the east. The road comes down from Intakiah towards the Euphrates, one of its branches crosses the desert towards Ctesiphon. It is now known as Salman Pak after the famous Moslem Saint, Salman the Persian. It is now a townlet within Baghdad Liwa. The arch, still standing at Ctesiphon is Tak Kisra (Chosroes arch) (Fig. 2.5b).

Kufah was established after the conquest of Iraq by the Arabs about 638 (17) during the reign of Omar, the Caliph. It was intended to serve as a permanent camp on the Arab or desert side of the Euphrates and occupied an extensive plain lying above the river bank. It was a pilgrimage stage point, and now it is one of the Shia religious centres within Karbala Liwa.

Al-Hashimiyah was built by Yazid Ibn Hubairah, an Omayyad leader during the reign of Marwan Ibn Muhammad, the last Omayyad Caliph. Al-Mansur, the second Abbasid Caliph made Al-Hashimiyah his capital for a time before the foundation of Baghdad.⁷

Madinat and Qasr Ibn Hubairah was founded by the same founder. Yazid had built his palace away from Kufah for political reasons. It was situated on the Eastern side of the Euphrates above Kufah. Al-Mansur did live for a time in this settlement before he founded his new capital at Baghdad.

Al-Anbar was a town on the Euphrates, some 64 kms west of Baghdad. Its existence dated from long before the Arab conquest, and it was called "Firuz Sabur" by the Persians. It had been built by Sabur II who reigned from 310 - 379 B.C.⁸ It was rebuilt by al-Saffah, the Caliph, nine years before the foundation of Baghdad. The Caliph al-Shaffah and al-Mansur made it their residence for a time. The importance of al-Anbar lay in its position at the head of the Isa Canal, the first great navigable canal flowing from the Euphrates to the Tigris. It is now in ruins and has been replaced by the modern market town of al-Fallujah.

Wasit was founded by al-Hajjaj the Omayyad victor of Mesopotamia, in the year 702 or 703 A.D. The city occupied both banks of the ancient course of the Tigris, and the two sides of the city were connected by a pontoon bridge. It was called Wasit (middle) because it was in the middle between Basrah, Kufah and al-Anbar. Apparently the eastern part of the town fell in ruins earlier than the western part. The Tigris ceased to flow past

Wasit in the 17th century, and thus the city fell completely into ruins. According to Susa, however, it was ruined after 1421 A.D. These ruins are now near al-Hai, the modern town within Kut Liwa.⁹

Samarra (Fig. 2.4b) had been founded as a new capital for the Abbasid Empire during the reign of al Mu'tasim, who had moved from Baghdad by the year 836 A.D. (221) for political reasons. It was no longer the capital in 892 A.D. (279) when Mutamid returned to Baghdad.¹⁰ Samarra, the temporary Abbasid capital, stands on bluffs out of the reach of floods. 4,320 years of historical change has seen the decay and birth of urbanism. Modern Baghdad represents the contemporary phase of this deep-rooted urban development.

In the course of urban evolution, one can easily see that Seleucia during the Greek period inherited Babylon. Similarly Ctesiphon during the Sassanid period replaced Seleucia. Baghdad of the Arab empire functionally inherited all of Ctesiphon, Kufah, al-Hashimiyah, al-Anbar, and other nearby settlements. Some of them are no more than relics at present, e.g. al-Anbar, while others such as Kufah survived to continue their urban functions. The advantages of Baghdad's situation have thus passed from one urban site to another.

Baghdad as the last of this site succession, has served as an outstanding commercial and cultural focal point between the civilizations of Babylonia, Assyria, the Kassite state, Greece and Persia. For this reason and with the very great efforts and resources of manpower in those days, Seleucia, Ctesiphon and other towns and cities were established to play the central role of a

capital. The site inheritance can be clearly seen when one realises that all the sites mentioned had practiced more or less the same functions, particularly in administration, defence and commerce. The importance of commerce goes as far back as 3000 B.C., when there were regular caravans connecting Babylon with the above mentioned civilisations.¹¹

The Chief Socio-economic and Physical Motives for Baghdad's Foundation:

It is perhaps worth discussing here the main motives of Baghdad's foundation. The situation and site of Baghdad have military, political and administrative advantages. The area is economically promising and agriculturally rich. The climate here was relatively milder than other desert areas and there were potential advantages for further urban growth.

Baghdad's physical setting was considered and examined very carefully before the foundation of the city. Several envoys were sent by al-Mansur to examine the land on either side of the Tigris. Moreover al-Mansur himself had inquired of the Christian Sahib Baghdad (the religious leader) about the area's climate, fertility, and accessibility. Sahib Baghdad replied "Your capital my Lord will be between four Tussugs, two on each side of the Tigris, Katrabul and Daduria in the Western side, Dug and Kilwaza on the Eastern side. You will be near water, surrounded with palm trees and orchards. It will be easy to move from one side to the other if any natural or human disaster should occur on any side. Commodities will be easily accessible from Morocco, al-Sham and Egypt. Rivers would be navigable to import from as far as China, India, Basrah and Wasit. It will be easy to use the Tigris as a

medium to import from Roman countries, Jezirah and Mosul. No enemy will be able to attack without building a bridge which could easily be cut, consequently trapping them. Finally you will be in the centre, between Basrah, Wasit, Kufah and Mosul, as well as the whole of the world. You will be in the vicinity of both mountains and the sea."*¹²

Al-Mansur was not satisfied with all the findings of his investigator, so he spent two nights and two days there exploring several sites. Finally he realised and accepted all the salient features already mentioned. He stated that "it is a good military camp. Besides here is the Tigris to put us in touch with lands as far as China. We can benefit from the sea produce, we can also import from al-Jezirah and Armenia. And this is the Euphrates through which all commodities will come from al-Sham, Bagdah and their surroundings."¹³ So al-Mansur was no doubt fully aware of the strategical and economic advantages of the physical setting of Baghdad; he almost drew a world map of the space relations and natural nodality of his city.¹⁴

* Tradition further avers that the monks produced a prophecy from one of their ancient books to the effect that a great city would be founded near their monastery by one with the name of Miklas, a name which the Caliph assured his audience he had actually borne himself as a boy. This was the name of a celebrated thief of the time and Mansur had earned the nickname by some boyish peccadillo.

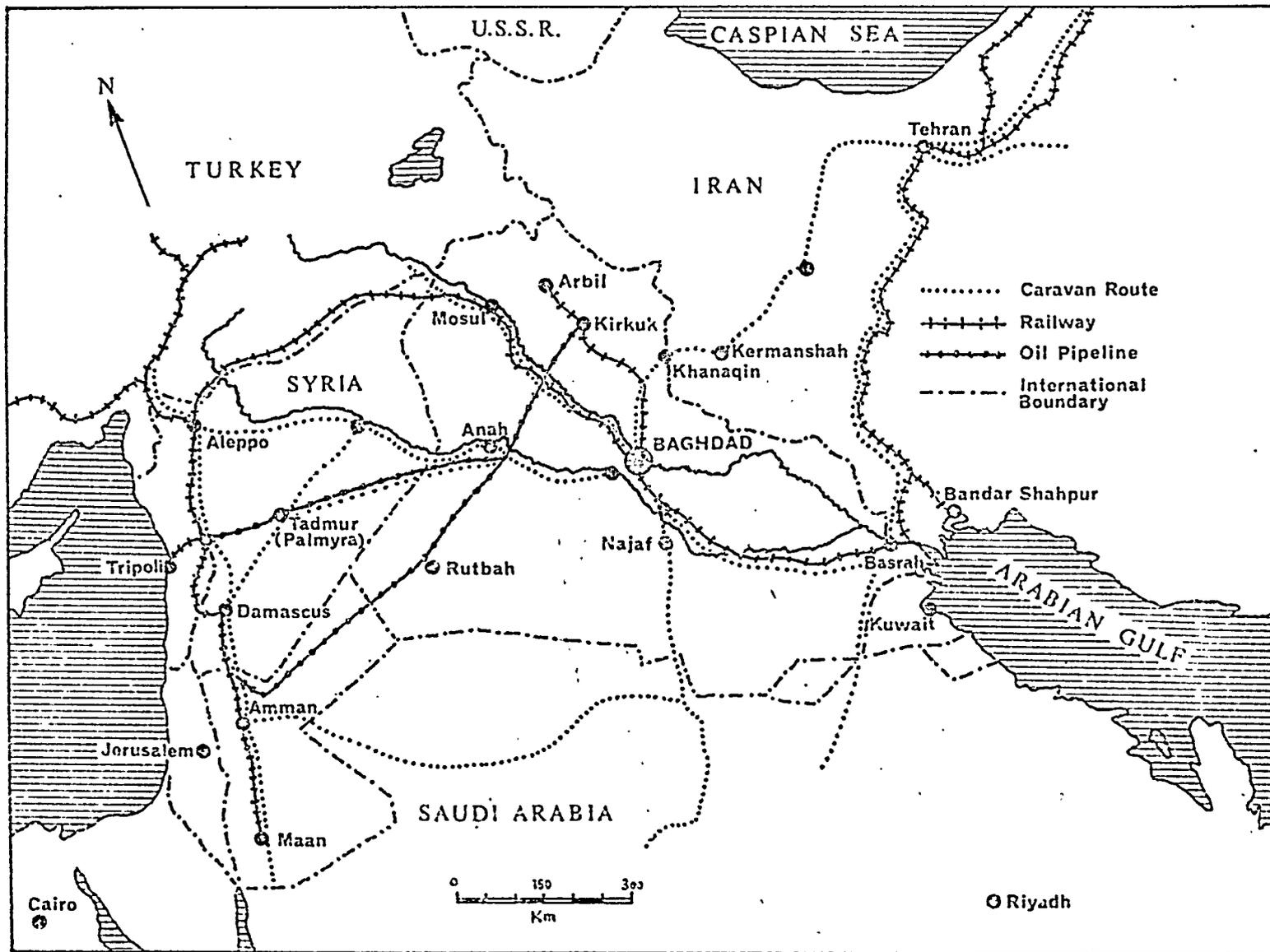


FIG.2.6 MAIN TRADITIONAL CARAVAN ROUTES IN THE MIDDLE EAST

If al-Rafidain* waist is considered as a nodal region, Baghdad which commands it becomes its nodal focus. The waist is where the Tigris and Euphrates runs nearest to one another. The distance between al-Rafidain in this waist is just 32 kms. This nodality has been reinforced on the twentieth century by building railways following the old routeways, i.e. both land and water routeways, which have attracted the majority of Iraqi urban and rural settlements (Fig. 2.6). Baghdad's situation clarifies the geographic reality that such settlements are induced by their nodality to be centres of urban development and traffic concentration. From its foundation until now Baghdad has been the major junction and break of bulk point in Iraq. At present Baghdad represents the chief collecting and distributing centre in the country. Usually two thirds of the goods imported from Syria, Lebanon and Turkey are unloaded in Baghdad, the other third goes to Basrah. Baghdad distributes these goods to the majority of Iraqi urban settlements.

The military factor behind the foundation of Baghdad was important because of the need to build fortresses in order to control a vast empire. Baghdad has a potentially defensive site. Rivers were considered as great defensive aids. As al-Mansur realised that no enemy could arrive in Baghdad without crossing a bridge, neither from the east (The Tigris) nor from the west (the Euphrates). Moreover, the loops in the Tigris reinforced the defensive advantages. So it was a strong tactical point in a good strategic situation, which minimized possible attacks. The military role of Baghdad's site is one of its primary functions. Iraq is surrounded by Turkey

* Al-Rafidain is an Arabic word widely used in Iraq, referring to the Tigris and Euphrates rivers collectively. 'The land of al-Rafidain' has the same meaning of 'Mesopotamia'. Rafid is the singular Arabic name of either of the two rivers. Literally rafid means tributary.

in the north and Persia in the east, both mountainous in terrain, while on the other sides Iraq is surrounded by Arab territories - inhabited by its own people.

The plentiful permanent water supply from the Tigris and Euphrates, and their irrigation systems, reinforced and facilitated the military defence function of Baghdad, since water is a vital necessity during both peace and war - particularly in long blockades. Several canals served as defensive moats for the city of al-Mansur. The geographical centrality of Baghdad both at present and at the time of the Arab empire in the Middle Ages, gave it defensive significance. Moreover, defensive facilities were reinforced when al-Mansur accommodated his clansmen and families around his palace in the new capital. He also had the city walled by three enclosures together with an external circular ditch. The walls here completed the natural defences offered by the area. However, the defensive characteristics of Baghdad's site are no longer as vital because of modern military warfare. The defense factor indeed has stamped the development of the city and its physical expansion as early as the first world war when the medieval walls began to be neglected.

The influence of the political factor is exceptionally well developed thanks to a prevailing Arab tradition whereby every ruler and ruling dynasty used to abandon the capital city of its predecessor because of the tribal rivalries at home and establish a newly founded city of their own.¹⁵ However, it would have been unwise of al-Mansur to choose his capital in Syria since it was entirely pro-Omayyads, and at the same time Damascus lacked good

water communication compared with the new site of Baghdad. The possibility of building his capital in Khurasan, the land of his Persian supporters was also dismissed. This choice of location would have isolated the caliph from his Arab homeland. Baghdad was on an effective line of communication. This would be evident since the already mentioned towns were developed in the same area. Baghdad has the double advantage of being near enough to Persia, yet it was in its native land.

Political disasters in Mecca and Madinah where the reason for much of the friction in both cities, which were the traditional centres of Islamic power. People in those places were no longer prepared to take up political initiatives. Moreover, Madinah was too remote to administer an empire successfully. The explosive atmosphere in al-Hashimiya^h after the revolution of al-Roundiyah* against the Caliph made it very difficult for him to stay there. Basrah had been established as a local provincial centre, at the same time being situated off the main international highways used at the time. Kufah citizens bore hostility towards the Abbasid Caliphs, because of their deep-rooted support for the Alwyid family. This was an additional factor for al-Mansur choosing another site. The Arab empire, however, had reached a stage at which the unifying effect of a single capital was urgently needed for cultural progress. In addition to the political advantages of Baghdad's central location, there were also administrative advantages. This enabled the caliph to control his empire.

* They were a particular group of people who had peculiar beliefs. They believed that their God was al-Mansur.¹⁶

Administrative function is considered here as another primary function of the city, which added to its urban development. Baghdad, however, became one of the major capitals during the Abbasid caliphate because al-Mansur wanted it to stand as a show-piece of Arab culture above the cultures of neighbouring countries as well as a secure place for the caliph's imperial army.

Baghdad is located in a fertile and cultivated plain with a developed system of irrigation from the Tigris, the Euphrates and Diyala. It has great agricultural potential, since it is situated in the levee and basin type topography of the Mesopotamian plain, both of which have a fertile soil and natural drainage.

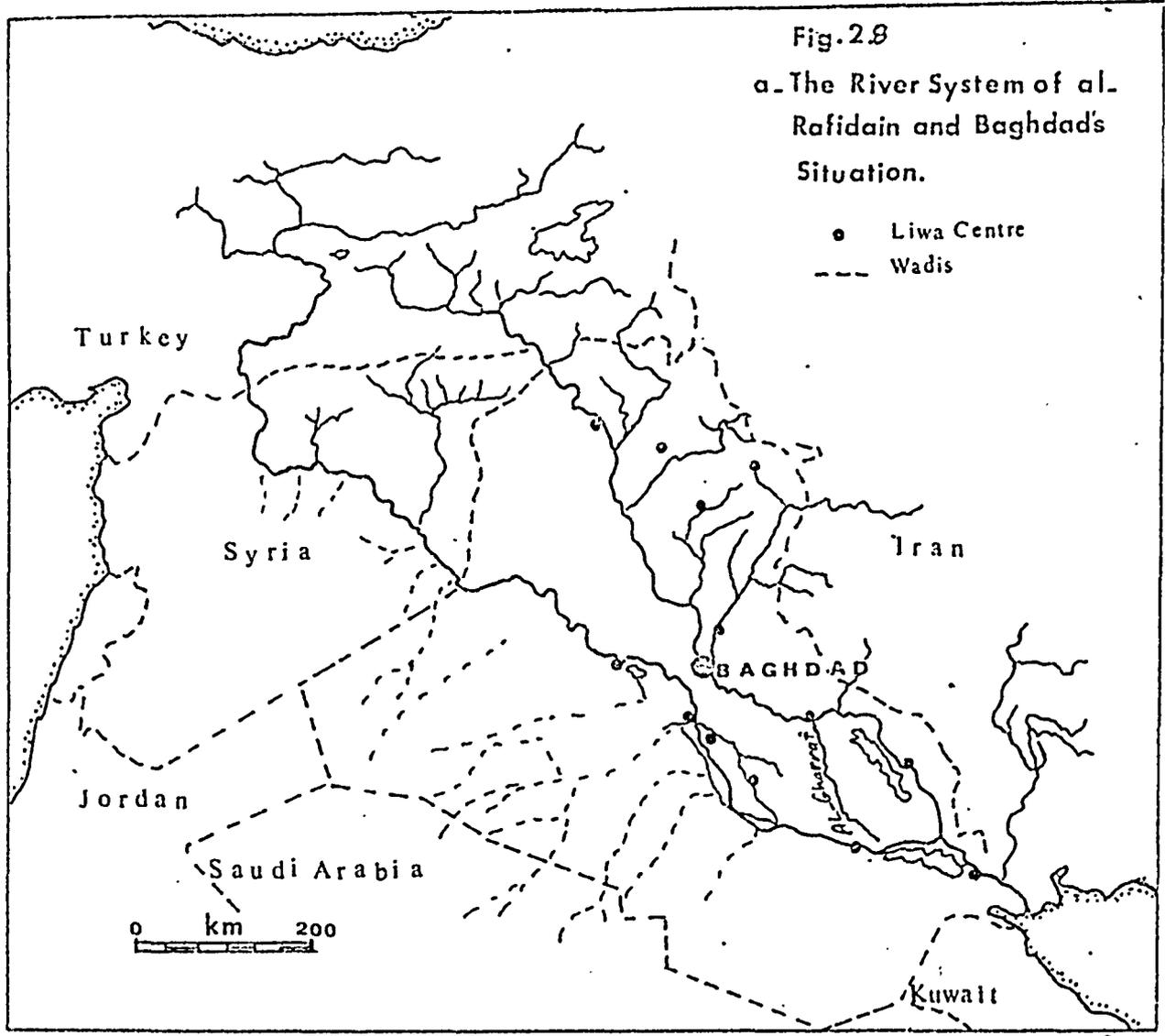
It has fertile hinterland from which supplies can be drawn. It has benefitted from the different levels of the Euphrates and Tigris, by using a gravity system of irrigation. The Euphrates is 50 m above M.S.L. opposite Baghdad, near Fallujah, while the Tigris at Baghdad has an average level of 32 m above M.S.L.

Baghdad's environs has a continuous growing season for crops, Baghdad enjoys hot weather which is however, relatively mild when compared with the severe heat of other marginal desert sites, which were capitals before Baghdad. Al-Rafidain have their own micro-climatic effects. More details about climatic conditions will be discussed later in chapter four.

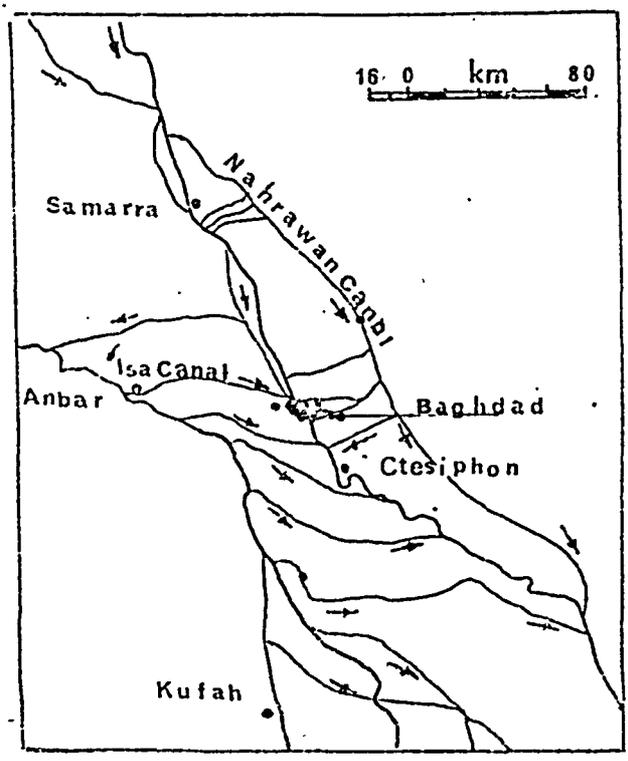
The area of Baghdad is free from malarial tracts so common in some other parts of the country. Besides, rivers, streams, orchards, vegetation, lakes, ponds, desert and the countryside near Baghdad between the Tigris and Euphrates were all a great attraction to the Caliph and his followers as recreational centres and picnic spots.

Fig. 2.8

a. The River System of al-Rafidain and Baghdad's Situation.



b. The Irrigation System of Central Iraq, Before the Mongolian Invasion



c. The Present Irrigation System of Central Iraq

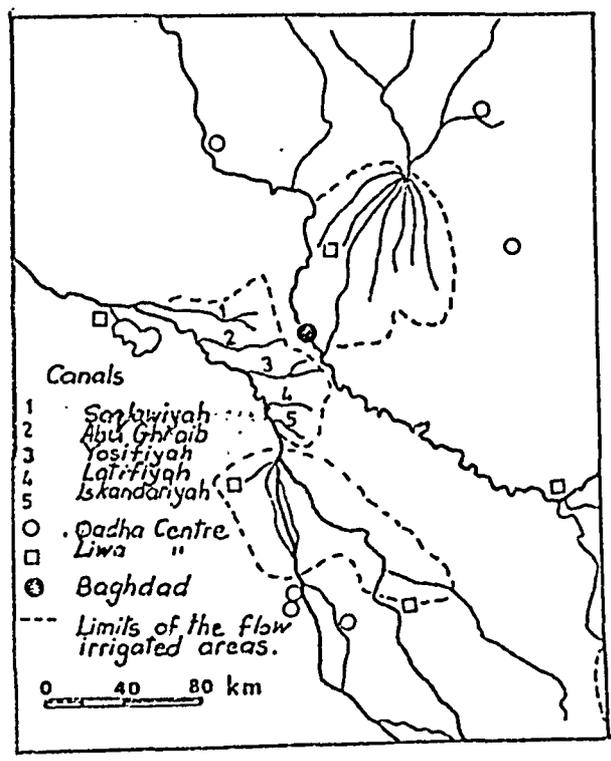
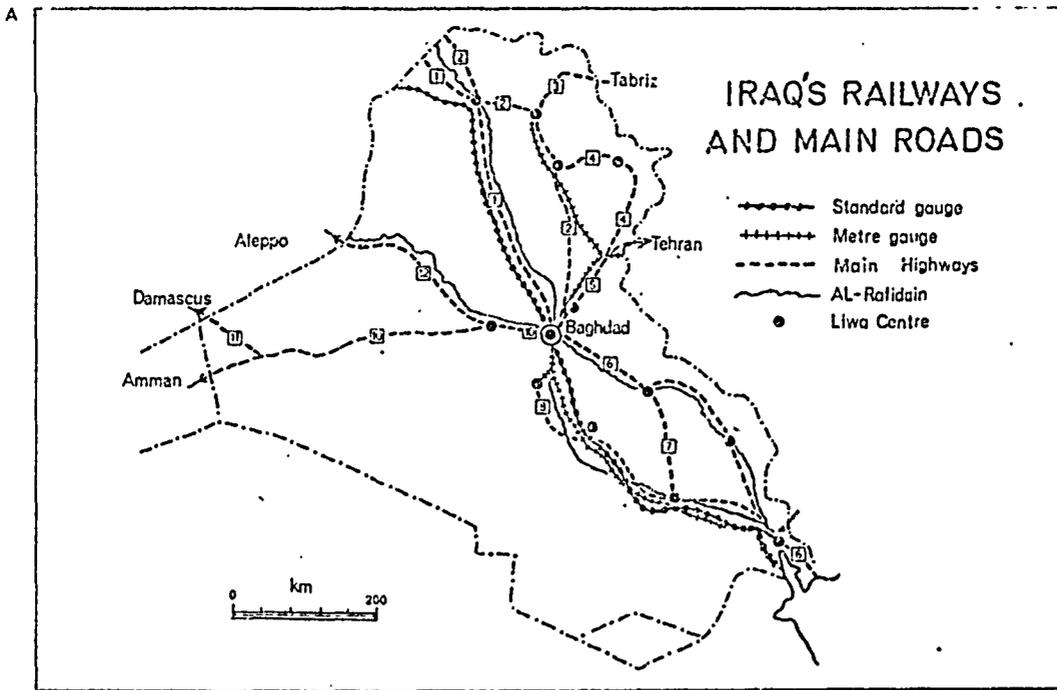
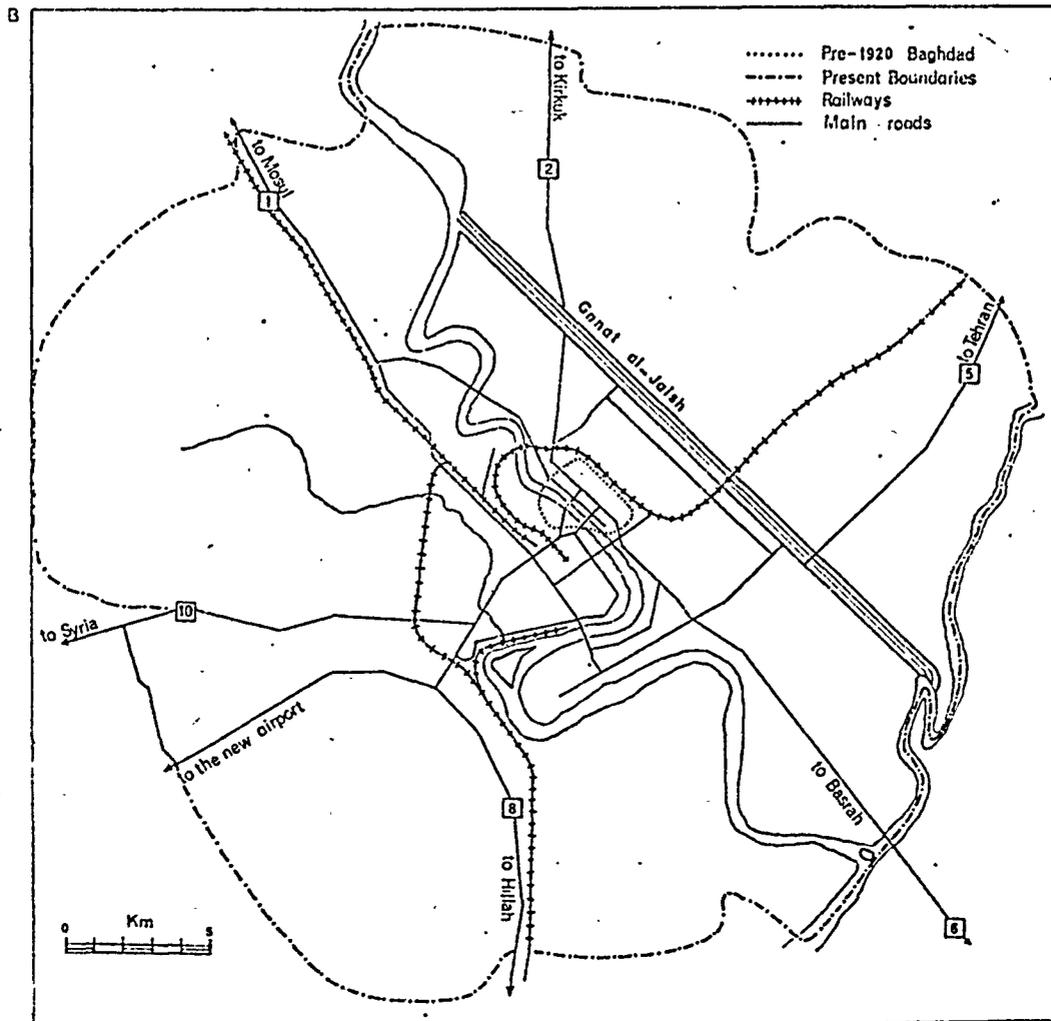


Fig. 2-7



MAIN ROAD CONNECTIONS IN BAGHDAD



As a result of flood control there were no physical obstacles to Baghdad's urban growth. Agricultural, trade, other domestic utilities, and now industry are making use of its many site advantages, which include water supply and plentiful space, thus paving the way for urban development in all directions.

By choosing this site for Baghdad, the capital of the Arab state was brought further north than ever before. From here it could perform the function of a capital more effectively.

Socially, Arabs were not rural dwellers, since the desert was their home land. So one can understand why they preferred peripheral sites, i.e. not far away from the desert, such as Basrah, Kufah, and several cities in North Africa. The desert was considered useful by the Arabs only for military training. But later on they transferred their capitals to interior sites such as Baghdad, to administer the empire from a more suitable location. By building the fortified city of Baghdad al-Mansur perpetuated his fame. Prestige was always very important to Arab leaders.

During the course of time Baghdad's situation has varied considerably in functional significance. This was owing to the means of transport, which have been influenced by the topography of the country, trends of international routes and political status, and their effect upon Baghdad's territorial position. These aspects will now be discussed.

Means of Transport: (Fig. 2.7, 2. 8)

River Transport:

Al-Rafidain are the main obvious physical features in the country. They have been and are to some extent still one of the chief means of transport. They are the main resources of fertility, irrigation and defence.

The "raison d'etre" of old and modern Baghdad lies in its functional aspect, the central situation being of great importance in attracting population and development of the city. This is why Baghdad resisted pressures and survived in spite of a long series of human and physical tragedies. Generally the natural topography of Iraq has facilitated Baghdad's accessibility to the most populated areas of the country.

The national and international relations of Baghdad are dependent on the transport network. They are river navigation, land routes, railways and aviation. The development of the city and of transport are strongly interrelated. Within this relationship Baghdad has served as the heart of the country with transport routes as arteries. The improvement of communication has promoted the prosperity of Baghdad, this can be seen equally in the past and present.

Commercially Baghdad made use of this advantageous situation. Water routes serve as one of the most important means of transport for Baghdad, as a large Mesopotamian centre. The influence of river transport can be seen by the competition of various central functions to occupy sites as near to the Tigris as possible. This accounts for the high concentration of bazaars and khans alongside the river in the central area. Until the Mongolian invasion, the Euphrates was connected with the Tigris by several canals, from the vicinity of the Mediterranean to the Arabian Gulf. The present canal of Saqlawiyah (Fig. 2.8c) crossing Mesopotamia in a general eastward direction and branching from the Euphrates above Fallujah, is without doubt one of the most ancient commercial navigation routes in the world.¹⁷ It is probably the canal known in the past as Isa*. The Isa canal was navigable by big ships of those days, which brought commodities from

* The area between the Tigris and Euphrates between Fallujah and Hindiyah Barrage is served by a group of canals commanded by the natural river levels, known as the Euphrates left bank canals. (Fig. 2.8c). These are the Saqlawiyah, Abu-Ghraib, Yusifiyah and Latifiyah, serving 336 sq. km.¹⁸

both al-Sham* and Egypt. Al-Mansur had already realised the situational importance of Baghdad when he said, just before Baghdad's establishment "that all ships of Wasit, Basrah and Baghdad are navigating in the Tigris"¹⁹ The security of river transport during those days was, however, greater than that of land transport, since attacks of caravans by nomadic tribes was not uncommon; this applied particularly between the Mongolian occupation and the end of the 19th century. The Tigris river was the main connecting link between Baghdad, Wasit, Basrah and India, in a southern and south-eastern direction and to Mosul, Diyarbakr, Rabiah, Armenia and Azerbaijan to the north. Until the sixteenth century, commodities were transported with European merchants navigating the Euphrates down to Fallujah. From there land transport was used to Baghdad, either stopping there or continuing on the Tigris to Basrah, India and as far as China. During the later Ottoman and early independent Iraqi times, vessels of up to 350 tons were navigable up to Baghdad. The first navigation company, established in 1841 by the English firm of Lynch and Co. operated commercially between Baghdad and Basrah in 1861.²⁰

Navigation on the Tigris had several difficulties such as the shortage of water in the dry season and the rapid flow of the river during the floods in the months of March, April, May and June; the lack of navigation facilities such as guiding signs, especially during the flood season; the high percentage of sedimentation in some places and the great number of acute curvatures, particularly between Baghdad and Kut, some 176 kms south of Baghdad. These handicaps have affected river transportation particularly during the last three decades.

* Al-Sham was used to indicate all of present-day Syria, Palestine and Jordan though sometimes it refers only to Syria. Damascus however, is still named locally as Al-Sham.

The declining importance of river navigation was aided by the competition of railways, particularly from 1940 onwards, when some railways were completed, and by the construction of new roads. At that time there was only Lynch and Co. connecting Baghdad with Basrah.

However, in 1968, there were 1,322 local crafts using Iraqi waters. Most of them were on the Tigris river and 202 steam-propelled river craft navigated between Basrah and Baghdad, making 1,670 up-and-down-stream journeys.²¹

The draught of the Tigris steamers between Baghdad and Basrah varies between three and five feet, depending on the season. On the other hand, only small steamers can go further than Tikrit, some 150 kms North of Baghdad, and then only with great difficulty.²² The total tonnage of river transport decreased from 280, 471 tons in 1960 to 218, 469 in 1966.²³ Only during the high-water season can the monthly tonnage of river transport exceed that of rail transport.

Land Transport: (Fig. 2.7A)

For a long time, growing Baghdad was served only by land and water routes, these being dominating factors in its situation. Baghdad of the Abbasid period was the key point of many important local and international routes (Figs. 2.2, 2.6). The four gates of the Round City of al-Mansur, were positioned so as to lead to the main parts of the Empire.

The high roads branching from the gates affected the growth pattern of the city. The present plans and growth of Baghdad are still affected by the modern highways, especially during the past two decades. The development of modern roads after the second world war, has freed

to a certain extent the spatial distribution of the central land uses from the previous, almost totally river-orientated layout.

The land transport can be traced in two distinctive stages. They are pre- and post-1920. From its foundation up to the twenties of this century Baghdad was a major caravan centre, where the most important international caravan routes met. The whole physiognomy and internal structure of the city was influenced by such factors. This is exemplified by the development of bazaars and the location of mosques on the main zuqaqs. These zuqaqs were the major lines frequented by caravans.²⁴

The second stage of transportation is exemplified by vehicle and rail-roads and aviation development. Concurrent with the modern transport development, the city grew bringing up new forms made necessary by the newly introduced media of transport. The street system that catered for camels in Baghdad thus became unsuitable for the modern means of transport. The old and new forms along the old and new routes of transport in the city bear witness to such influences. The city has multiplied its size owing to transport development. Furthermore, the immediate hinterland of Baghdad was increased owing to the modern transportation development (Fig. 2.7B).

During the First World War lorries were introduced to Iraq for the first time by the fighting armies of Britain and the Ottoman Empire. By 1914, however, less than a dozen cars were in use in the country.²⁵

Through transport developments Baghdad managed to remain the dominating commercial exchange centre. Iraq has developed as a country aided by trains and automobiles which have played an active

Fig 2.9 a -Traffic Movement at Baghdad Airport 1951- 68

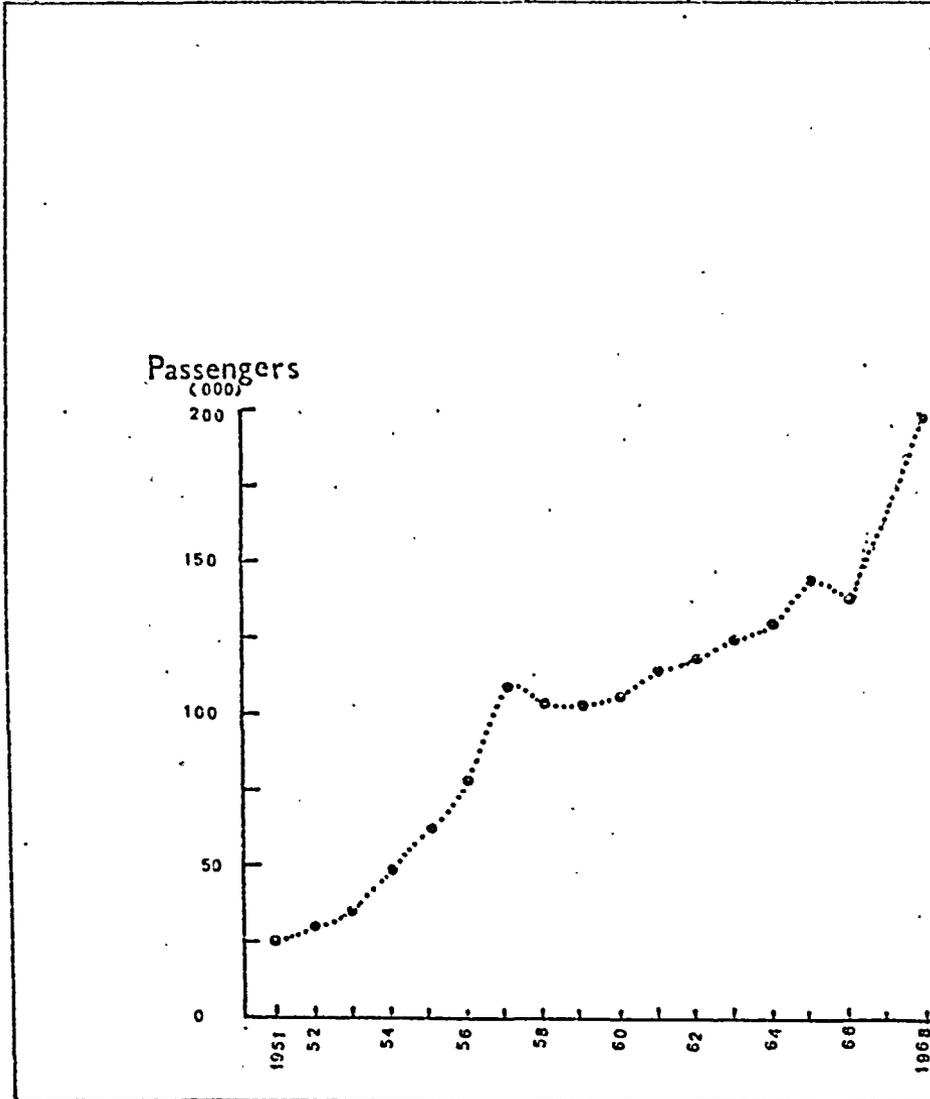
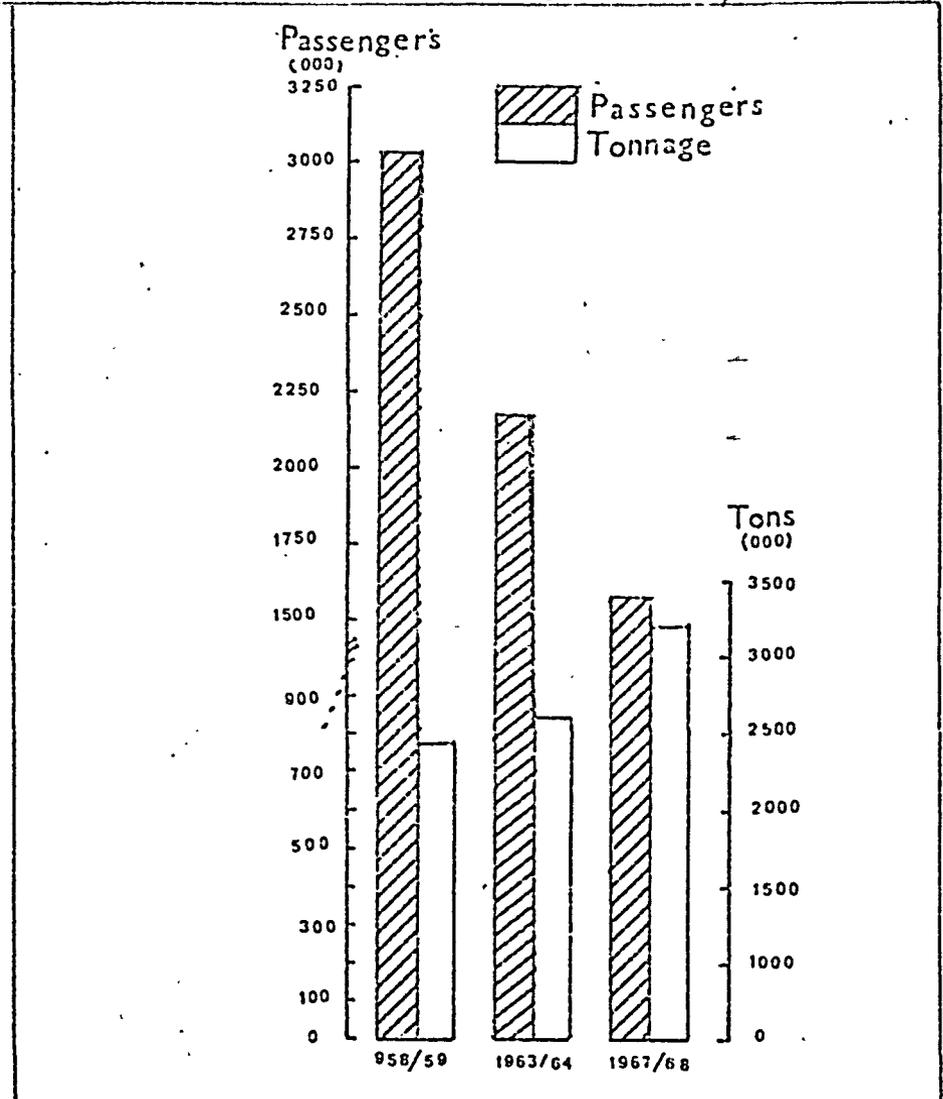


Fig 2.9 b -Number of Passengers and Tonnage Carried by Trains 1958/59-67/68



role in mobilising the commercial and human resources in the growing urbanization of the nation. (Animals and animal-drawn carriages were the main means of transport to connect Baghdad locally and internationally.) Changes began to take place at the end of the First World War, when Iraq in 1914 had two roads for vehicular traffic one trans-desert road to Syria, and the other to Turkey via Mosul (Fig. 2.6). The first regular transport between Baghdad and Damascus via Rutbah was started between 1923 and 1925 by Nairn and Co. Before the Second World War, Baghdad was connected with Tehran via Kermanshah, by surface route for strategic military aims since Iraq was considered by the British Army as a second line of defence, with Egypt as the first. So Iraq, at that time had only one route connecting Persia, Iraq and Syria. But after 1952 vehicular transport almost completely superseded the old animal caravans as the means of communication. After 1956 Iraq entered a more promising transport phase when the main highways were built. This has affected Baghdad morphologically, since the City more than doubled its built-up area after that date (Fig. 2.7B). Since then (Fig. 2.9b) road traffic has begun to compete successfully with railway traffic. About 3,195,000 passengers travelled by rail in 1958/59 falling to about 1,695,800 in 1967/68.²⁶ During this period there has been an annual decrease of 10 per cent in rail travel. The number of cars increased very quickly and in 1968 54 per cent of all cars for the country were in Baghdad.

Iraq already has more than 11,000 kms of highways, tarmac roads, roads under construction and non-metalled or unsurfaced roads. In February 1968 the daily traffic flow on the main highways towards

Baghdad averaged 19,119 vehicles on a week-day including cars from Iran, Syria and Jordan.²⁷

As a multi-functional capital, Baghdad acts as a focal point for the bulk of traffic of the country. The traffic routes, which man has developed by building either roads or railways, are few. One follows the Euphrates, another the Tigris, a third the Shatt al - Gharraf, joins the two rivers. A fourth reaches the edge of the Zagros range and its foot-hills and a fifth leads to the north-east of the country (Figs. 2.2, 27A).

Cross routes are also few in number. The Zagros Mountains, because of the breadth, height and number of ranges, cannot be easily crossed. They, too, have few crossing points as follows:-

In the far south, the Zagros can be crossed between the province of Fars where, not far from Shiraz, the ruins of Pasargadae and Persepolis can still be seen, and the province of Khuzistan where Susa was the capital for 4,000 years before the present capital of Ahwaz. From there, the route ascended towards Babylon, abandoning the general east-west direction which would have taken it, beyond the Shatt al-Arab, into the heart of Arabia. But what would have been the use of this route before Islam? It was not until Muhammad made the Arabian peninsula a centre of attraction, with the pilgrimage to the Holy Cities, that great streams of traffic were launched in that direction. It is not surprising that Basrah was founded only in 638.²⁸ This city marks the point where the new route crossed the Shatt al-Arab, making it possible to cross southern Mesopotamia which is full of lakes and marshes.

In the North, Iranian Kurdistan is linked with the Mediterranean by the Pass of Rawanduz, the valley of the Greater Zab, the trough

lying at the foot of the sub-Taurus plateau, the ford of Jarablus and the Halab (Alleppo) region. In Iraq, this route cuts the one which follows the Tigris in the foothills between the mountains, the Tigris and the Greater Zab. Historically this region has been the geographical centre of Assyrian power, with the cities of Khursabad (Dur Sharruqin) Nimrud (Calah) and Niniveh. In modern times, the City of Mosul, third in size after Baghdad and Basrah,

mirrors the importance of these crossroads, which are three thousand years old.

About equidistant from the two crossing points just mentioned, the border mountains can be crossed relatively easily between Baghdad and Tehran. The route is a traditional one. The Persian inscriptions of Behistan, the Sassanian rock carvings, the refinery of Khanagin and Kermanshah are all witnesses of different ages, visible from the present road where motor-coaches and car travel towards Tehran, giving sufficient evidence that man has never been without the use of this line of communication. In fact the Tehran-Kermanshah-Khanagin-Baghdad route, far more than the one through Rawanduz which is difficult because of the Zab gorges, or the one through Susa which is too much out of the way, has always been the main line between the Iranian plateau on one side and Mesopotamia, Syria-Palestine and Turkey on the other. Through it, for about five thousand years, have passed most of the soldiers and merchants whose coming and going have brought the Mediterranean parts of Europe and Africa into contact with Mesopotamia, Central Asia and India.

This natural route, developed quite early by man, is therefore important not only to Iraq, but even to Europe and Asia. The only

route which can be compared with it is the zone of steppes north of the Aral, Caspian and Black Seas, which brings Asia and Europe into contact but, unlike this one, does not serve Africa.

The situation of Baghdad is now clearer. While it is possible, on emerging from the Zagros, to fork towards Assyria and Mosul to reach the crossroads of Aleppo, ancient Antioch, and especially Anatolia and the Straits, the Aleppo crossroads can be reached much more quickly by going up the Euphrates through Ramadi, Anah and Dayr al-Zor. It is also much easier to reach the Mediterranean coast or Egypt by crossing the Syrian desert than by a detour to the north. Finally, it is easiest to reach the great holy cities of Shiism, Samarra, Kadhimiyyah, Karbala, Kufah and Najaf from Baghdad and not from Mosul or even Basrah (Fig. 2.6). These cities are grouped around it, as well as Medinah and Mecca, the Moslem places of pilgrimage which can be reached through Darb Zubaidah* from Najaf and the Darb al-Hajj from Samawah.

But in Baghdad's situation, the powerful Diyala alluvial cone has pushed the Tigris so far to the west that it is only about 32 kms from the Euphrates and the dry land of the Syrian desert, presenting no difficulties to traffic. Areas subject to flooding are reduced to a minimum; two projections of the Diyala cone come so near the Tigris that they reduce the escape channel for the flood waters to a minimum width. Similarly between the Tigris and Euphrates, the great line of depressions which are filled by the heaviest floods of the two rivers are reduced to a very small width. Here also is a waterway which Le Strange has described as "one of the oldest in the world". Thanks to the canals which run from the Euphrates and

* Darb Zubaidah was built during the reign of Harun al - Rashid and has been named after his wife, Zubaidah who built it 786-809 A.D. (170 - 193 A.H.)

whose branches reach the suburbs of Baghdad, a boat can pass from one river to the other. This waterway has been used for many centuries; as late as the end of the 19th century (Fig. 2.8). Thus no region was better suited for crossing the rivers than that between the edge of Jezirah on the north and the line between Hindiyah and al-Aziziyah on the south. Beyond this line the Tigris, its distributary al-Gharraf and the Euphrates are flanked on both sides by almost continuous hawrs (marshes). In the Middle Ages the latter region was filled by the great marsh which stretched as far as Kufah above Najaf. Southern Mesopotamia was thus - and still is - impassable from east to west.²⁹

After 1968, when Kuwait, the Arabian Gulf States and Saudi Arabia were connected with Baghdad via Basrah by an international highway, the tourist industry in Syria, Jordan, Lebanon, Turkey and Persia began to flourish. Consequently Baghdad has benefitted from the growing importance of its situation, especially the tourist industry. Baghdad is not usually the destination of tourists, but it serves as an important crossroad in their journeyings.

The growing facilities along the highway, the great number of car owners from the rich Arabian-Gulf Shoikhdoms and the unbearably hot climate in the Arabian Peninsula in the summer season are additional reasons for the increase in tourist traffic. The transit freight traffic through Iraq via Baghdad has also increased along with tourism, especially on account of the different economic structures of the countries in this region.

Railway Transportation: (Fig. 2.7A)

The Arabian Gulf and the surrounding Arab lands were, and still are, the goal of different great powers for commercial, political

and strategic reasons.

Moreover, the discovery of oil and the growth of air communication in the 20th century have given the region and Iraq in particular, a significant place in the political framework of the world. This is explained by the connection of Baghdad in 1919 with Basrah by a metre-gauge railway and the completion in 1926 of another line to link Baghdad with Khanagin and Kirkuk.

In 1940 Baghdad was connected for the first time with Europe by standard gauge railway via Syria and Turkey. Baghdad benefitted functionally from this situational development which enlarged its tributary area and facilitated further its accessibility. The present Iraqi railway system is 2,190 kms of standard and metre gauge lines, diverging from Baghdad. The railway network stimulated Baghdad's trading activity. The commercial freight between the Arabian Gulf and other Arab countries, and between the Gulf and Europe does not need the transshipment from metric to standard gauge, as had been necessary before 1968. Furthermore, it also increased the transport capacity of both passenger and goods traffic as it passes through the relatively thickly populated and cultivated regions of southern and central Iraq. It is worth mentioning here that though the railways inside Baghdad can be used to define stages in the modern growth of the city (Figs. 2.7, 2.7B), they have influenced city growth less than the case of European towns. Baghdad lacks efficient commuter trains. Most of the towns in the Baghdad region are not linked with the capital by trains. The increase in railway freight traffic was 555,133 tons during the period 1958-68, with an annual average increase of 55,513 tons

(Fig. 2.9b), More than 71³⁰ per cent of the total freight traffic in 1968 was transported by the Baghdad - Basrah line. This reflects the functional importance of Baghdad and Basrah as the major urban centres in the country.

However, Baghdad together with the rest of Iraq did probably not benefit as much as was expected from the modern railways. The majority of these lines were built mainly for military purposes. Most of these lines avoid towns and populated areas, as most towns lie at least 10 kms away from the lines. Thus they were inadequate to meet the socio-economic needs of the country.

In 1936 the Iraqi Government bought the railway system from the United Kingdom, repaired many of the lines and built the standard gauge Baghdad-Basrah-Um-Qasr line to connect Baghdad and the northern extremities of the country with the Arabian Gulf and so unify the gauge system.

Aviation:

Since 1923, when Baghdad was connected with Cairo by air, air traffic has been growing steadily. Baghdad's international airport was built peripherally in 1932. During 1939 more than 250 planes landed and were serviced at the Iraqi airport. Situationally, Iraq is located on or near the shortest route between Western Europe and South-East Asia. This has increased the importance of Baghdad's air travel.

At present Baghdad's airport serves many international airlines, reflecting Baghdad's importance within the Great Circle route.

The total number of passengers using the airport in 1968 was 97,800 embarking and 99,339 for disembarking, served by 3,149 flights

(Fig. 2.9a). 2,027,800 Kgs of freight movement took place at Baghdad airport in the same year.

Both passenger and freight figures are respectively 24 and 5 times greater than those of the second biggest airport in the country, Basrah. Baghdad is now regularly connected to Basrah by daily services, and to Mosul and Kirkuk by a weekly air service. In the internal air traffic of Iraq between Baghdad - Basrah, and Baghdad - Mosul, 11,000 passengers embarked during 1968, while 88,600 kgs of freight were loaded and 30,900 kgs unloaded at Baghdad airport. The peak period of both international and local passenger traffic to Baghdad is during the religious festivities, such as Muharram* and pilgrimage seasons. 4,400 and 10,500 Hajis were flown in and out of Baghdad during the Haj (pilgrimage) season of 1968.³¹ As a result of the growing importance of Baghdad and the recent sprawl of the city, a new modern international airport capable of receiving big jet planes, was opened in 1970.

Baghdad at present is connected with the Middle Eastern capitals and with London by three different routes crossing Europe. Iraqi Airlines, the national airlines of Iraq, had in 1968 a fleet of three Trident Jets and four Viscounts. In addition the various Iraqi petroleum companies have their own fleets of planes for their freight and passenger transport. Petrol export by pipelines could be considered a kind of transport, but Baghdad is not directly influenced by it, since the main pipelines do not pass

* During this month the Shiah Moslems mourn the death of Husain, the son of Ali, the Caliph, who was killed near Karbala in the year 680 A.D. Baghdad, Karbala Kufah and Najaf are the main destinations of these local and foreign pilgrims.

through the city (Fig. 2.6).

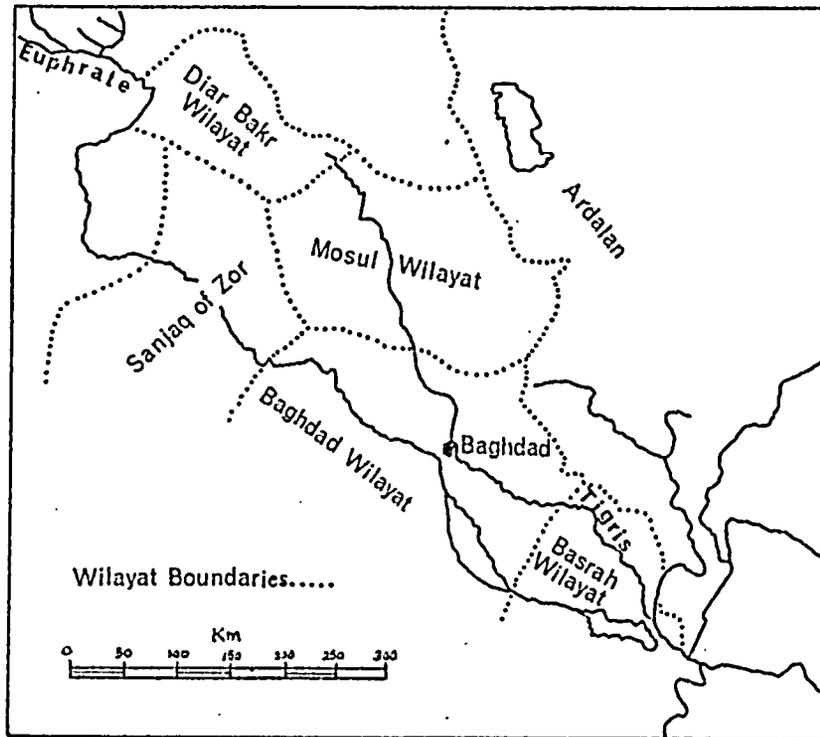
From the above it appears that Baghdad represents the central hub of the network of river, land and airways of Iraq. But generally one can state that railways are mainly used for goods transport. Neither waterways nor airways have functioned as anticipated.

Trends of International Routes and Political Status:

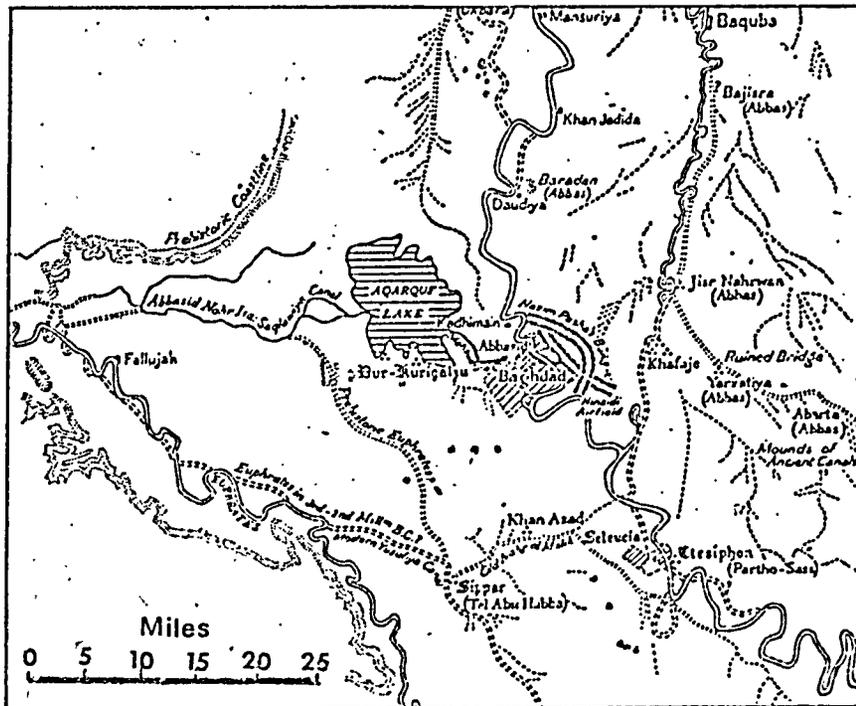
As already discussed Baghdad has been a cultural and commercial centre for centuries, founded to command the strategic geographical situation on the landbridge between Africa and Europe in the West, and Asia in the East. Several factors caused Baghdad's post-Abbasid position to be reduced to a mere shadow of its past glory and dominance. Such factors are: the rivalry with Cairo during the second half of the tenth century when Fatimids built it as their capital, the Ottoman occupation lasting about four centuries, the discovery of the Cape Route to the east in the late fifteenth century, the opening of the Suez canal in the beginning of the second half of the nineteenth century and the relatively thinly populated areas of the Arabian Gulf, without natural wealth except oil in the twentieth century.

In terms of its past focal situation it has now been pushed into the background as an international crossroads. That has been the fate of all the Mediterranean commercial centres too, because international commerce was taken away from the region, leaving the Mediterranean as a cul-de-sac. Thus Baghdad as an inland city was affected by what is called "transport capture"

Fig. 2.11.



a. Baghdad as a regional capital during The Ottoman Conquest



b. Ancient and modern courses of the Tigris and Euphrates near Baghdad.
 The ancient courses of rivers and canals are shown by broken lines
 Handbook
 (After Naval, Iraq and the Persian Gulf, 1944)

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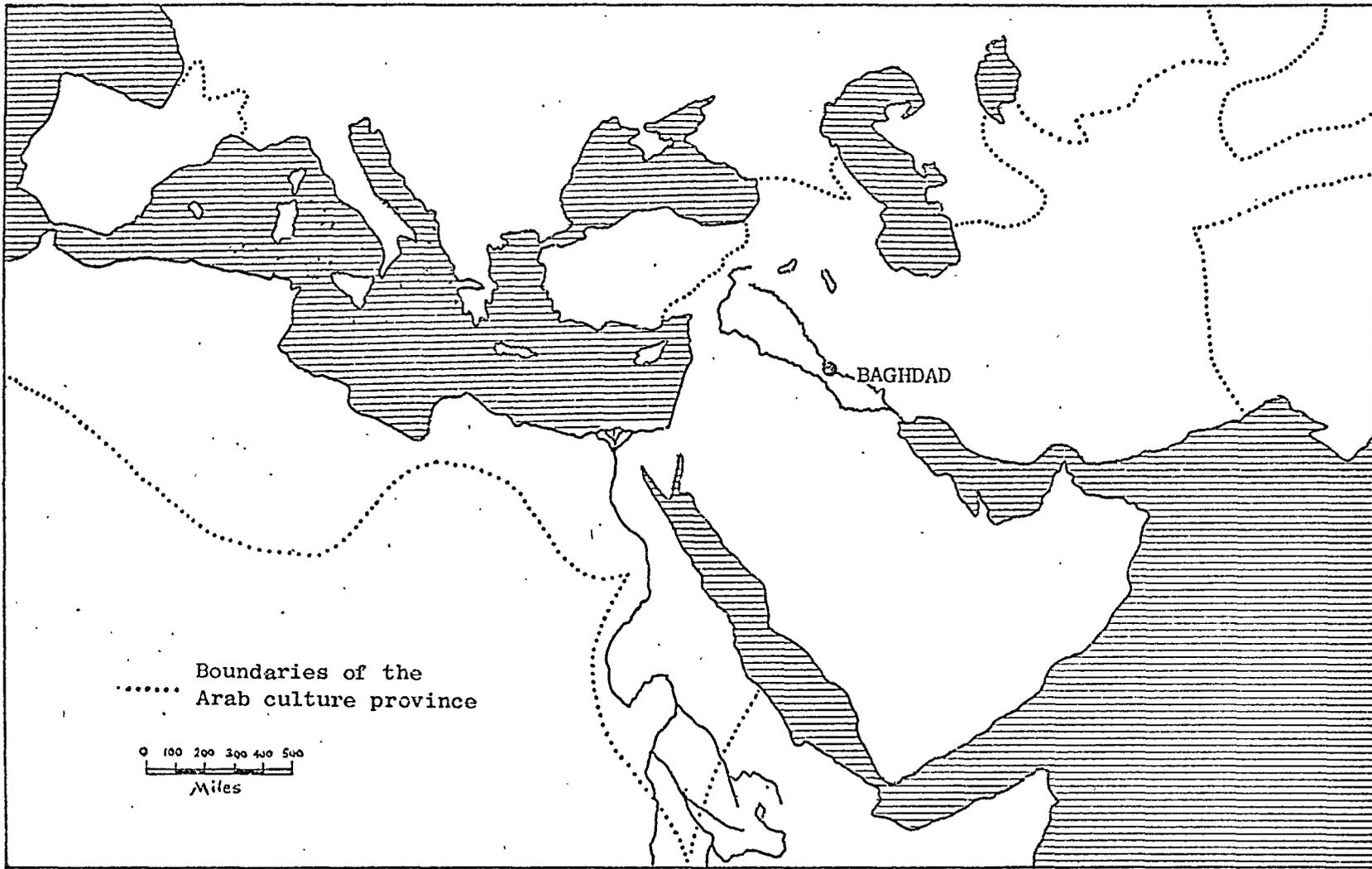


FIG.2.10 BAGHDAD AS A CAPITAL OF THE ARAB CULTURE PROVINCE

F. R. 4.

while most of the Atlantic ports flourished. After World War II Baghdad began to rebuild^d its situational importance, partly through technical development such as the development of the vehicular and railway network as a means of communication. New roads were built as an attempt to meet the needs of the rapidly growing urbanism of the country. Thus the fortunes of the city, as well as of the country, have begun to be promoted in this century. This has affected the tempo of urban growth in most of Iraq's urban settlements. At the present time as well as historically Baghdad's situation has varied. This is reflected in the development of its structure. Baghdad, as the capital of the Abbasid Empire, differs from present-day Baghdad, both in its built-up areas and increased rate of functions. In its early history, Baghdad was the political capital of the Arabs and the cultural centre of the whole area now known to Europeans as the Near and Middle East, North India, Armenia and some parts of Western China. During the Ottoman occupation however, Baghdad was no more than the capital of a Wilayat (Province) (Figs. 2.10, 2.11). Accordingly, the functions discharged by Baghdad have differed widely, particularly in terms of administrative importance. During the Ottoman occupation like Rome early in the 19th century Baghdad became but a shadow of the ancient imperial city. It has recently begun to regain some of its historical prestige, and is developing as one of the main centres in the Arab World. The 20th century independence gave the city a new impetus to develop various structures to accommodate the newly needed functions of a capital. (The population of the city grew rapidly and Baghdad joined the "million" cities of

of the world in the 1950's. Politically, Baghdad's situation is very important for Iraq and the Arab nation. This is because the city became the capital of a country bordering non-Arab countries i.e. Iran and Turkey.

Present-day Baghdad's political, cultural and economic complexity developed as Western and later Eastern civilisations began to leave their mark on its historic fabric. The West-East confrontation in the area has exerted its own influence on Baghdad's structure as an Arab city. This situational importance can be elucidated by tracing the foreign powers' presence in the area. There are two political factors in Baghdad's situation, i.e. the external and the internal one. The former, for example, was noticed after the Bolschevik Revolution, when Baghdad became the main transit centre for Iranians, as a result of the economic boycott between the new Russian regime and Iran. Iran began to import from the West through the Mediterranean via Baghdad. But when the northern and middle parts of Iran were connected with the Arabian Gulf via Tehran by railways, once again Baghdad began to lose some of its situational advantages as a transit centre both in volume of transit trade and revenue. But transit activities with both Syria and Turkey were stimulated again during the Second World War because of the absence of the security of trade in the Mediterranean and Arabian Gulf. Revenue from transit during 1944 was about 14 million I.D. (14 million pounds) out of which about 70 per cent of the transit trade was from Iran.

Another external political example can be stated here when Iraq became a signatory of the Baghdad Pact, a political and military

treaty between Iraq, Turkey, Iran and Pakistan. This Pact lasted from 1956 - 58 after which time it collapsed as a result of the 1958 Iraqi Revolution having strategic consequences. In addition, the collapse of the Arab Hashimid Union between Iraq and Jordan, following the 1958 Revolution against the monarchy, was an obvious example of the internal political factors.

The major factors discussed are all interrelated. Thus the main routes of the country have been continuously controlled by the physical landscape. Roads and railways for example running parallel to al-Rafidain in the Mesopotamian plain or following valleys and plains in the northern mountainous parts.

Again as already discussed, Baghdad's situation needs to be understood in terms of the great benefits it has derived from the man-made routes radiating from it. Along these routes one can see the international influences on the physiognomy of the city which is always undergoing changes. Only in these terms can an urban centre be evaluated as an important functional site.

1. Raoul C. Mitchell, Physiographic Regions of Iraq, Bulletin de la Societe de Geographie d' Egypte, 30, (1957), 75
2. W. B. Harris, From Batum to Baghdad, Edinburgh and London (1895), 299; L. J. Hall, The Inland Water Transport in Mesopotamia, London (1921) Appendix A.1.
3. Al-Balathri, Futuh al-Buldan (The Conquest of Countries) First edition Cairo (1932), 285.
4. Naval Intelligence Division, Iraq and the Persian Gulf (1944) pp. 210 - 211, 223.
5. H. Goteburg, The Ancient Ages, Translated into Arabic, from German by Dr. D. Yosif, Bayn al-Nahrayn Magazine, 1, 2, Mosul (1973) 191; Naval, op. cit. 211.
6. M. Jawad and A. Susa, Dalil Kharitat Baghdad Qadiman Wa Hadithan (A guide to the map of old and Modern Baghdad) Baghdad (1958); Vaughan Cornish, The Great Capitals, London, (1923) 50.
7. Al-Balathri, op. cit. 285.
8. Al-Magdisi, Ahsan al-Tagasim Fi Marifat al-Agalim, (The Best Classification for Knowing the Regions), Leiden (1906) 121; al-Balathri, op. cit. 285; Ahmed Ibn Abi Yakub al-Yakubi, Mujam al-Buldan (Lexicon of Countries), Leiden (1883) 429; M.R. al-Feel, The Historical Geography of Iraq between the Mongolian and Ottoman Conquests, 1258 - 1534 A.D., A thesis submitted to the University of Reading for the degree of Doctorate of Philosophy (1959) 271.
9. Al-Feel, op. cit. 391; G. Le Strange, Baghdad During the Abbasid Caliphate, Oxford (1900) pp. 8, 20.

10. P. Hitti, History of the Arabs, London (1932) 328
414 and 446 - 68
11. M.S. Ahmad, Middle East International Highways, from Caravan
Routes to Modern Roads, Middle East Journal, 21, 1 (1967) 101.
12. Ahmed Ibn Abi Yakub al-Yakubi, Op. cit. 4, 78.
13. M. al-Khudhairi, Muhadharat Fi Tarikh al-Umamal - Islamiyah
(Lectures in the History of the Islamic Nations), Cairo, 10th
Edition (1956) 77.
14. G. Hamdan, The Pattern of Medieval Urbanism in Arab World,
Geography, 47 (1962) 122 - 125.
15. Muhammad Ibn Jarir al-Tabari, Tarikh al-Umam Wa al-Mulook
(The history of the Kings and Nations), Cairo, 6 (1939)
147; R. Coke, Baghdad, The City of Peace, London (1927) 25.
16. Al-Tabari, op. cit. 6, 147.
17. Hamdan, op. cit. 125
18. Colonel Chesney, Expedition to the Euphrates and Tigris,
London, 1(1850) 33; Directorate General of Irrigation, The
Control of the Rivers of Iraq and Utilisation of their Waters,
A Report submitted by the Irrigation Department Commission,
Baghdad (1951) 2.
19. Abi al-Hasan, Ali al-Husain Ibn al-Masudi, Muruj al-Dhahab
Wa Madin al-Jawhar (The Meadows of Gold and Minerals of
Jewels), Beirut, First edition, 3 (1965) 119, H.J. Hasan,
Tarikh al-Islam al - Siasi Wa al - Dini Wa al - Thakafi Wa al -
Ijtimai (The Political, Religious, Cultural and Social History
of Islam) 7th Edition, Cair, 2 (1965) 312.

20. N. Mansi, Roads in the Arab World, Baghdad (1959) . . . 2 - 3
(in Arabic); R.E. Cheesman, Secretariat of the High
Commissioner for Iraq; A History of Steam Boat Navigation
on the Upper Tigris, Geographical Journal, LXI (1923) :
28 - 29.
21. Ministry of Planning, Central Statistical Organisation,
Annual Abstract of Statistics, (1969) 243; A Committee of
Officials, an Introduction to the Past and Present of the
Kingdom of Iraq, Baltimore (1946) . . . 67 - 68.
22. Lieut. Commander A.S. Elwett-Sutton, The Tigris above
Baghdad, Geographical Journal, LX (1922) 21.
23. K. Kazanchi, Al. Naql al-Mai Fi al-Iraq, (The Water Transport
in Iraq) Baghdad (1967) . . . 4 - 6.
24. Douglas Carruthers, The Great Desert Caravan Route, Aleppo to
Basrah, Geographical Journal, 52 (1918) 157.
25. Stephen H. Longrigg, Iraq, 1900 - 1950, A Political, Social
and Economic History, Oxford (1953) 64.
26. Directorate General of Railway Administration, A Financial
Report for the year 1967 - 1968, Baghdad (1969) . . . 29 and 39.
27. From a personal interview with the Authorities of the Directorate
General of Roads and Bridges, Baghdad (1970).
28. N. Maruf, Mudunun Islamiyah Awjadaha al-Arab (Islamic Cities
founded by the Arabs) Baghdad (1964) 47.
29. L. E. De Vaumas, Introduction Geographique a l Etude de Baghdad,
Arabica, 9 (1962) . . . 231 - 234; Cornish, op. cit. pp. 29 - 59.
30. Directorate General of Railway Administration, op. cit., . . . 39;
Philip W. Ireland, The Baghdad Railway; Its New Role in the
Middle East" Journal of the Royal Central Asian Society, 28, 3
(1941) 329

31. Ministry of Planning, op. cit., 1969, p. 255.

Chapter 3

Baghdad within Iraq's Urban
Hierarchy

Introduction:

The purpose of this part is to present brief general background about the Mesopotamian urban context within which Baghdad represents the major centre. It will cover two major aspects. The first is the scale, nature and consequences of the urbanization of the country particularly during this century. The second is the urban hierarchy of Iraq. The associated fundamental socio-economic problems of contemporary urbanization represented by rural - urban migration will be analysed in Chapter 9 within Part IV.

Urbanization in Mesopotamia.

Urbanization is as old as civilization and equally complex. As a process it is defined as an increase in the proportion of a region's population located in urban areas whose activities are primarily centred on government, trade, industry and allied interests. Urban growth on the other hand, is an increase in the population of towns although the balance between urban and rural population may remain largely unaltered.¹ It is pertinent to mention here that, though freedom of choice of living and work place may be important, the need for proper socio-economic and physical planning is of prime importance in Iraq, in order to control urban growth properly. Mesopotamian urbanization is operating within a different context to that of the West, since it has its own nature and scale which are different even from other

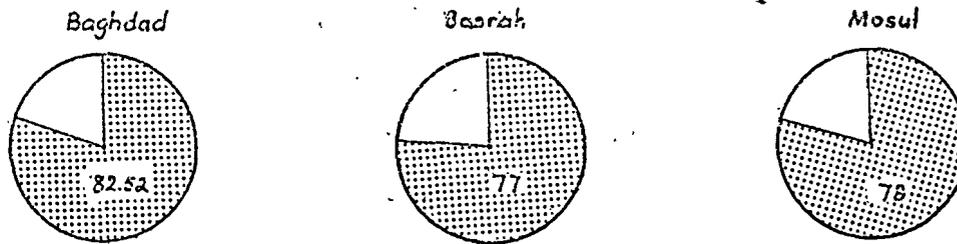
Fig.3.1 Urban and Rural Population in the Three Major City Areas

	Urban	Rural	Total	P.C. of Total	P.C. of Total Pop. of Urban Centre	
	1	2	3	4	1:3	2:3
Baghdad	1,521,400	343,100	1,864,500	23.7	82.52	17.48
Basrah	313,327	95,389	408,716	5.0	77	23
Mosul	243,311	71,846	315,157	3.85	78	22

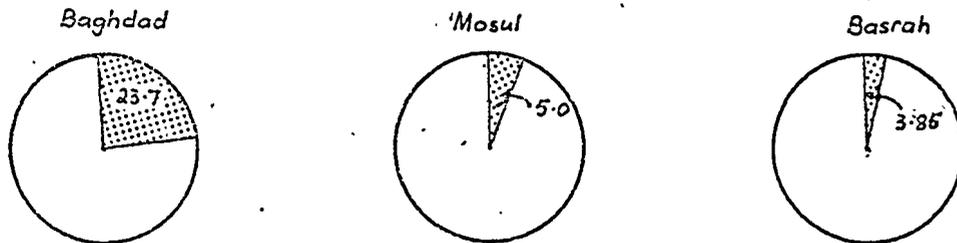
 Urban

 Rural

Total Urban: Population of Each City as a P.C. of the Total Population of Their Administrative Areas.



P.C. of Urban Population within the Administrative Areas of the Three Major Cities to the Total Population of Iraq



Arab countries in many ways.

Even in ancient times Mesopotamia experienced urbanization as many cities like Nineveh, Nimrud and (Ur) indicate. Probably in such towns, especially at Ur, man was trained for the first time to live in a tightly packed community. Kufah, Basrah and Baghdad are examples of world-famous towns during medieval times. Even under the Ottoman occupation (1638 - 1917) Iraq estimated proportion of urban population amounted to between 20 and 24 per cent,² but it is only in the past quarter of this century that urbanization has taken place with uniquely rapid growth, a phenomenon which has understandably led to the present urban problems. Nearly all urban places are increasing rapidly. Generally speaking the larger the town the greater its growth (Fig. 3.1)

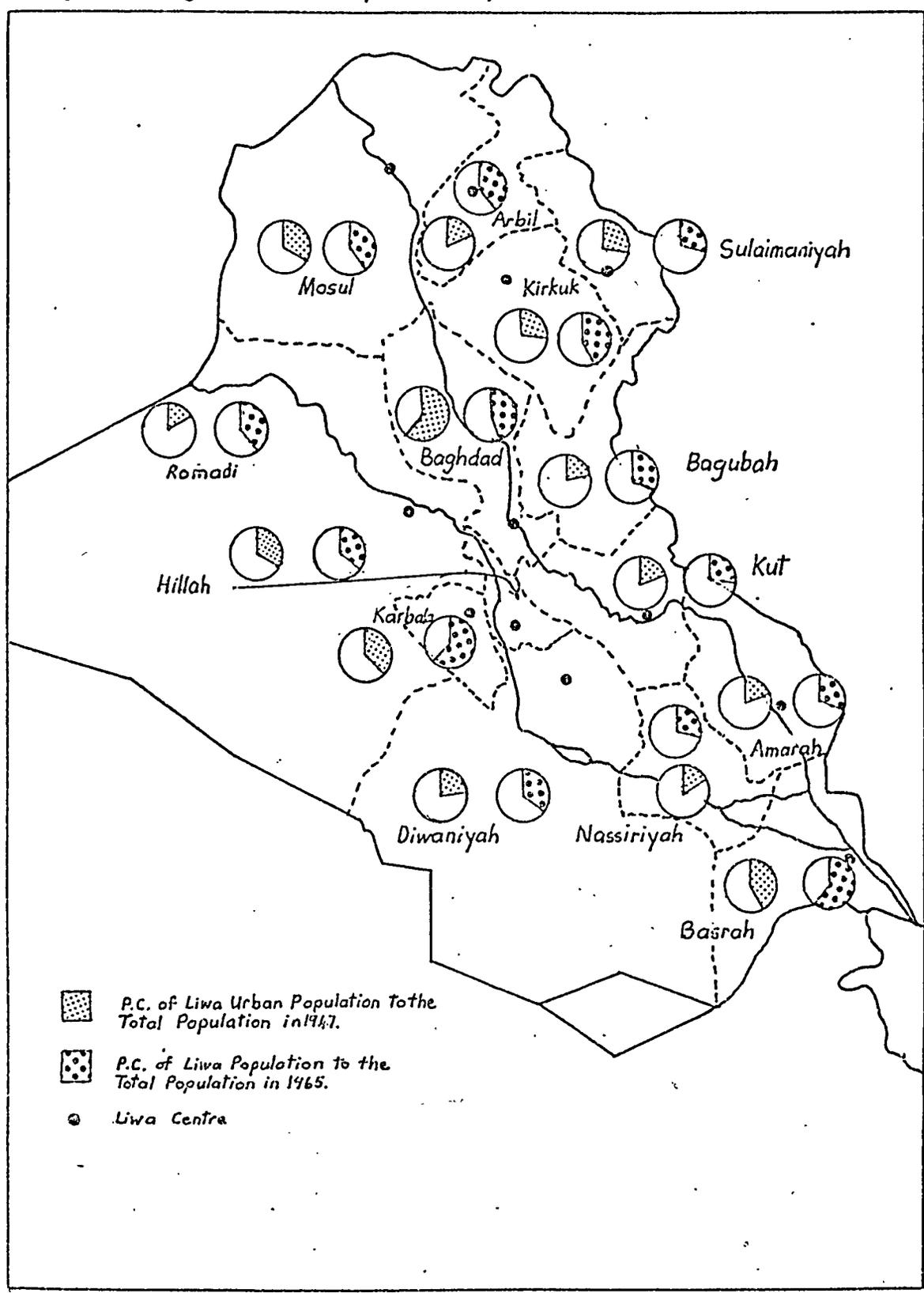
Table 3.1: Number of villages and towns with population increase during the period 1957 - 1965.3

Year	Villages and Towns exceeding 2000	5,000	10,000	15,000	20,000	30,000	40,000	50,000
1957	16	18	5	5	5	2	1	3
1965	31	22	14	7	3	5	2	4

	100,000	200,000	300,000	400,000
1957	1	-	-	1
1965	1	1	1	1

From this table it appears that the number of towns increasing in population was 35. In 1957, Iraq had only 5 towns with a population of more than 50,000. By 1965 the number had risen

Fig. 3.2 Change in Urban Population by Liwas between 1967 and 1965



to 8. There was only one city with a population of more than 200,000 in 1957. By 1965 this number had increased to 3. The major factor of such growth was the rural-to-urban migration, a process which eventually deprived the countryside of its necessary labour force.

The main towns of Mesopotamia have grown up considerably, not in the wake of industrialisation or modernization of agriculture as in the case of Europe, but rather ahead of these changes. Almost in all the 14 liwas (provinces) of Iraq the percentage of urban population is increasing, (Table 3.2)

Table 3.2: Changes in urban population by liwa to the total population of each liwa. (Fig. 3.2)

Liwa	1947 %	1957 %	1965 %
Mosul	35	38	37.5
Sulaimaniyah	24	38	32
Arbil	21	26	38
Kirkuk	23	39	48
Diyala	19	23	34
Ramadi	20	27	38
Baghdad	60	65	48
Kut	22	24	31
Hillah	28	41	36
Karbala	42	78	72
Diwaniyah	21	24	33.5
Amarah	20	25	30
Nassiriyah	15	18	28
Basrah	40	46	62
TOTAL	34	36	44

Source: Directorate General of Civil Affairs, The Official General Census of Iraq's population for the years 1947, 1957 and 1965.

This table shows that Karbala, Basrah, Kirkuk and Baghdad support the highest percentages of urban population. This can be attributed to the religious factor in the case of the first liwa to the existence of port and oil facilities in that of the second, to the existence of oil in that of the third, and in the case of Baghdad liwa to ^{the} city's administrative, cultural, industrial, commercial and religious significance. Although the percentage of urban population in Baghdad liwa has declined, the absolute number of urban population has more than doubled.

Baghdad and other major towns are growing too fast for the real needs of the country and of the towns themselves as well as in relation to the economic potential of the state and society. Growth of towns has outstripped growth of employment thus increasing urban unemployment. Most of the growing urban places of the country are not guided by any concrete planned goals and are therefore suffering from many problems of growth which are accentuated by the fact that investment in these areas does not follow any considered overall plan. Even Baghdad, despite enjoying the greatest investment, still suffers from serious financial shortages, to meet the requirements of twentieth century urban life. Urbanization is the most obvious human phenomenon in Mesopotamia today. Increasingly, cities are attracting people from the rural areas. It is estimated that more than 50 per cent of the population in 1971 were living in non-rural areas.

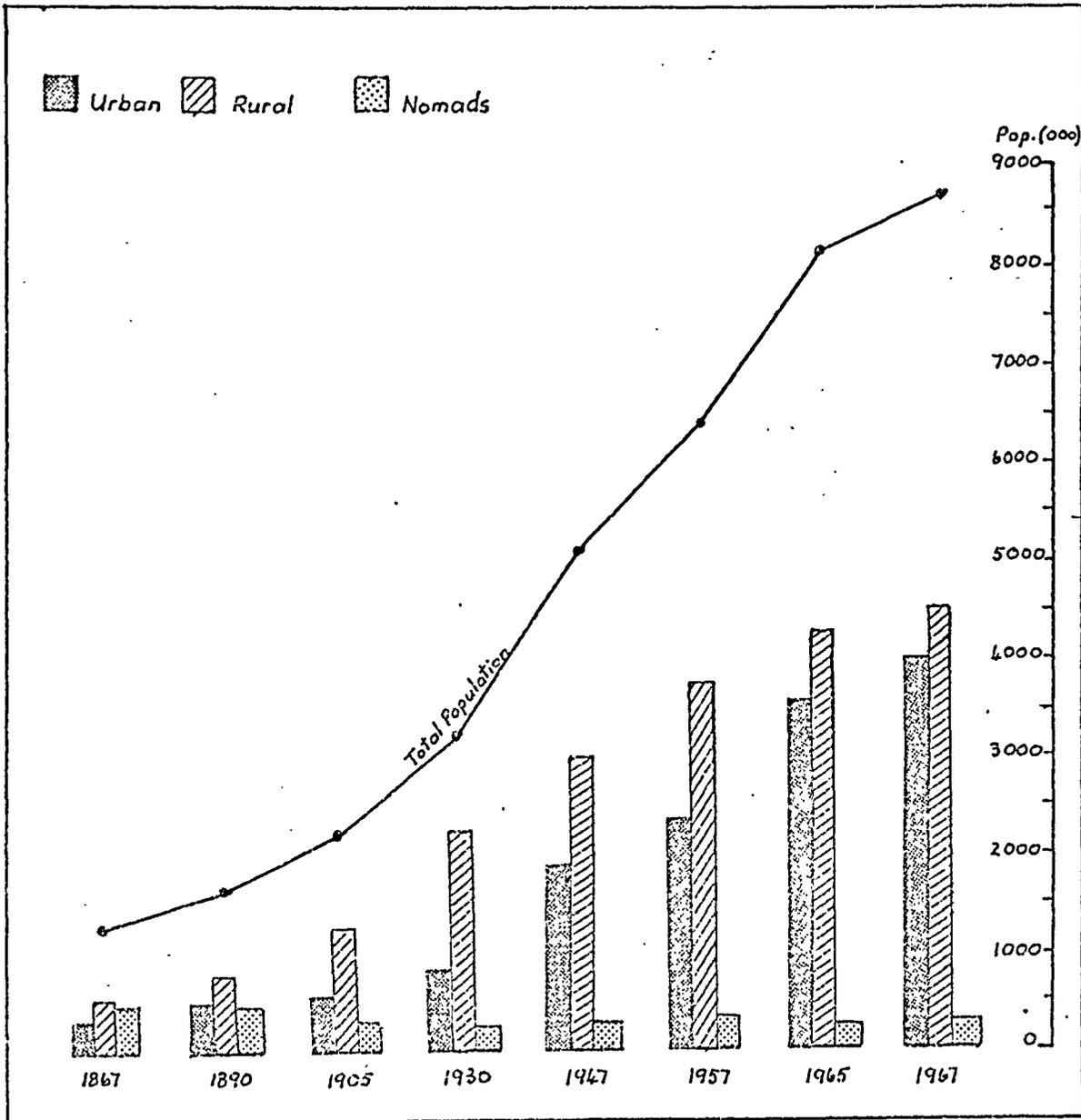
A few major towns are the main targets for the majority of the migrants (Fig. 3.1). About three quarters of the country's urban population are in the five cities of Baghdad, Basrah, Mosul

Kirkuk and Najaf. These towns house more than 30 per cent of the total population of Iraq. Baghdad liwa alone has more than 26 per cent of all the Iraqis and nearly half of the country's urban population. Baghdad city on the other hand has more than 23 per cent of the country's population; such high concentration resulting from the fact that Baghdad liwa has 60 per cent of all the country's industrial workers, 75 per cent of the business, commerce and other technical services. Besides being the capital, Baghdad is also the centre of higher education and culture. It also provides a vast variety of public services.⁴

Baghdad, the primate city, has more than five and six times the population of Basrah and Mosul, the next biggest towns, respectively. As reported in 1971, the country has a dozen cities of more than 100,000 inhabitants,⁵ and there is nothing to indicate a slackening of urbanization in the foreseeable future, since the process of modern urbanization in Mesopotamia has just commenced. In the absence of regional and physical planning urbanization in Iraq has brought about great economic and social disorder. It is a salient feature that public facilities available in most towns are far from adequate.

R (In the case of Baghdad for instance, as with the other major cities, this urbanization has induced structural instability within its society instead of the promise of a better life.) Signs of congestion, overcrowding and deteriorating residential mahallahs, traffic bottlenecks, irrational location of development and land speculation all indicate that things are far from well.

Fig.3.3 Population Change in Iraq During the Period 1867-1967



Tracing the available data on population growth reveals that urbanization has become a discernible force mainly in the last three decades. As a developing country, Mesopotamia does not have reliable and consistent data on the country's population prior to 1947. Specific details of population composition in the recent censuses of 1957 and 1965 are not reliable either. The successive censuses show essential differences in methodology, classification and organization. Therefore the data obtained are comparable only to a limited degree, and the conclusions have to be drawn with great care. There are no data which can illustrate demographic events in the years between the censuses. Neither are scientific elaborations of the results of the censuses available.

(Fig. 3.3) and (Table 3.3) illustrate the population changes in absolute numbers and percentages:

Table 3.3: Population change in Iraq between 1867 - 1970

Year	Iraq's Total Population in (000)	Percentage Distribution		
		Nomads	Rural	Urban
1867	1,280	35	41	24
1890	1,726	25	50	25
1905	2,250	17	59	24
1930	3,288	7	68	25
1947	5,200	5	59	36
1957	6,496	4	59	36
1965	8,261	3	53	44
1967	8,826	3	51	46
1970	9,498	-	48	52

Source: Figures for the period 1867 - 1930 are based on M.S. Salman, The Economic Development in Iraq 1864 - 1958, Beirut (1965) 53.

Those for 1947 - 1967 are from the Annual Abstract of Statistics issued by Central Statistical Organization, Ministry of Planning, Baghdad. Figures for 1970 are from Ministry of Municipalities, Demographic and Research Section.

The urban percentage of the population in 1965 is rather high for an agricultural country such as Iraq. Even if one excludes urban centres of 2,000 or less, like some Qadhas (district centres) and Nahiyahs (sub-district centres), the percentage would remain as high as 31 per cent.

In one century (1867 - 1967) the population of Mesopotamia has grown from 1.28 million to about nine millions^{5.00}, representing an almost sevenfold increase. During the same period the urban population increased by more than thirteen times and yet the percentage increase was only from 24 to 46 per cent of the population. However, urban growth has been most notable only since 1930. The real drift to urban centres seems to have commenced early in the 1930's and intensified with and after the second World War and the Iraqi Revolution of 1958. Table 3.3 also shows that during the period (1867 - 1930), while the main increase was in the rural percentage and part of the nomadic population had settled either in agricultural land or near the oil fields,⁶ in the same period the proportion of urban population remained relatively static. However, the absolute number of urban population increased considerably. The population changes from 1947 - 1957 and from 1957 - 1965 is presented in Table 3.4. From this table one can observe that the percentage increase of the country's population was almost the same for the two periods, 1947-1957 and 1957-1965.

النزوح الحضري

During the period 1947 - 1965 the urban percentage increased from 34.3 to 48.1, while Baghdad tripled its population having 44.8 per cent of the country's urban population, mainly owing to the recent waves of migration.

Table 3.4 Population change in Mesopotamia during 1947 - 1965 and its Urban Component in (000)

Area	Population			Percentage increase		Percentage of the Country			Percentage of the Country's Urban		
	1947	1957	1965	1947-1957	1957-1965	1947	1957	1965	1947	1957	1965
Mesopotamia	4,816	6,299	8,261	30.8	31.1						
Total Urban	1,653	2,455	3,634	48.4	48.0	34.3	38.9	48.1	100	100	100
Urban Places up to 5,000	1,395	2,391	3,580	71.3	60.1	28.9	37.9	46.9	84.3	97.3	92.8
Towns with pop. 20,000	1,070	2,008	3,352	88.5	66.8	22.1	31.8	40.6	64.4	81.8	80.8
Cities with pop. 100,000	738	1,463	2,472	98.2	68.9	15.3	23.2	29.9	44.6	59.6	59.7
All towns ex. Baghdad	1,126	1,657	2,527	97.2	52.5	23.4	26.2	30.6	68.1	67.6	60.9
Four Major Liwas*	991	1,713	2,738	72.9	59.8	20.5	27.2	33.1	59.9	69.8	66.0
Five Main Cities**	861	1,552	2,471	80.2	59.2	17.8	24.6	29.9	52.08	63.2	67.9
Baghdad City	503	1,000	1,620	87.0	63.1	11.1	15.8	17.48	32.3	40.7	44.8
Towns with pop. between 2,000 and 5,000	171	150	171	- 12.34	14.06	3.5	3.38	2.07	10.36	2.38	2.07

* Baghdad, Basrah, Mosul and Kirkuk

** Baghdad, Basrah, Mosul, Kirkuk and Najaf

The four major liwas were inhabited by 66 per cent of the urban population in 1965. From this and the following tables one can conclude that the uneven distribution of urban population is one of the distinct negative features of Iraq's urbanization.

Some interesting features of population change in the country between 1947, the date of the first official census, and 1970 are shown below (Table 3.5)

Table 3.5: Population change in Iraq,* 1947 - 1970

Area	Population 1947	Change 1970	% Increase 1947-1970	% of Iraq as of 1970	% of urban Iraq
Iraq	4,799,550	9,498,362	97.9	100.0	
Iraq Urban	1,635,533	5,452,435	233.3	57.8	100.0
Four Major Liwas	2,444,799	5,179,166	111.8	54.5	93.3
Four Major Cities	806,381	3,150,248	290.6	33.1	56.7
Urban places over 20,000	1,064,862	4,530,233	325.4	47.6	81.6
Urban places over 5,000	1,395,050	5,524,543	276.1	55.3	94.4
All cities except Baghdad	1,132,533	3,584,722	216.5	37.7	64.5
Baghdad City	503,000	2,463,100	389.6	25.4	45.0

Source: Kozo Ueda, Population Projects for Iraq, 1957 - 1980, U.N.D.P. Baghdad (1970) 3, Ministry of Municipalities, Demographic and Research Section Baghdad 1971 (Unpublished information).

* The 1965 census shows the total population of Baghdad to be 1,864,500 within its municipal boundaries, whereas the population of the urban built-up area was 1,521,000.

This table indicates that while the country's population has nearly doubled between 1947 - 1970, the urban increase was 239.3 per cent. The four major cities increased by 290.6 per cent showing high percentage increase. Baghdad outstripped the Iraqi towns with the highest percentage increase, i.e. 389. It seems that about 95 per cent of the urban population of the country are living in towns of over 5,000 inhabitants, (Table 3.7)

These trends of fast urbanization are expressed in the phenomenal physical expansion of most of the towns.

Table 3.6 provides data about population trends of the 14 liwa centres and al-Najaf city during the periods 1947 - 1957 and 1957 - 1965.

During the period from 1947 to 1965, Baghdad maintained its position as Grade 1. Basrah took Grade 2 replacing al-Mosul in 1965, because it was the only port of the country, having its rich oil fields. Thus attracting migrants from the nearby impoverished southern parts of the country.

In 1965 Diwaniyah replaced Arbil in the tenth rank. Amarah was and still is the main source of migrants, especially towards Baghdad and Basrah, due to its backward status socio-economically. In 1965, it had fallen to grade 9. Migration has greatly contributed to the rapid growth of Baghdad. According to the Master Plan of Baghdad, there were 650,000 migrants in the city who migrated during the period 1947 - 1965.⁷

Hillah had temporarily acquired the place of Karbala in 1965. This could be attributed to the fact that Hillah is the capital of the middle Euphrates basin, rich in agricultural products.

Table 3.6 Population change in the 14 liwa centres and al-Najaf city during the period 1947 - 1957 and 1957 - 1965

Town	Rank		1965	Population		% increase 1947-1957	1965	% increase
	1947	1957		1947	1957			
Baghdad	1	1	1	535,328	1,000,000	86.2	1,620,000	62.0
Mosul	2	2	3	133,625	178,222	33.3	243,311	36.0
Basrah	3	3	2	101,448	164,905	62.5	313,327	90.0
Kirkuk	4	4	4	68,308	120,402	76.2	167,413	39.1
Najaf	5	5	5	56,261	89,190	58.5	128,095	43.6
Sulaimaniyah	9	9	6	33,510	48,812	45.6	86,822	77.9
Karbala	6	6	8	44,150	60,294	36.6	82,301	36.5
Hillah	8	7	7	36,579	54,353	48.6	84,717	55.9
Amarah	8	8	9	36,907	53,529	45.0	64,847	21.1
Diwaniyah	12	12	10	19,878	33,433	68.1	60,553	81.1
Arbil	10	10	12	27,036	39,913	47.6	50,407	26.3
Fassiriyah	11	11	11	24,038	39,239	63.2	60,405	53.9
Bagubai	14	14	14	19,511	19,517	0.03	34,575	77.1
Kut	13	13	13	14,940	26,644	78.3	42,116	58.0
Ramadi	15	15	15	9,919	16,512	66.4	28,723	73.9

Source: General Censuses of Iraq for 1947, 1957, 1965. Polservice consulting Engineers, Master Plan of Baghdad, Warsaw Vol. 1 (1969) pp. 11-7, 11-9

The importance of the religious factor can be seen in al-Najaf, which maintained a high Grade, fifth in the list. Najaf is the burial place of Ali, the Caliph, considered the first of the 12 Shiah Imams. Since 1965 Sulaimaniyah has overtaken both Hillah and Karbala. It is the regional capital of the North-eastern part of the country, being well placed in a fertile intermountain basin. In addition, a large cement works, cigarette factories and a recent university have been developed in al-Sulaimaniyah attracting people from beyond its region.

(3.6)
The table shows that, in general, the larger the town, the higher the percentage of population increase it achieves. Baghdad has multiplied its population ~~more than three~~ times, Basrah has more than trebled, while al-Mosul, Kirkuk, Sulaimaniyah, Hillah and Diwaniyah ^{have more than doubled.} The present pattern of size distribution of urban communities in Mesopotamia exhibits the high degree of skewness expected with the agglomeration effect of the migration process. The largest urban concentration is in Baghdad City with a population of more than two millions, which is approximately six times larger than the second largest city, Basrah. There is ^a noticeable gap in population size in the one half to one million category of cities, (Table 3.7).

Table 3.8 shows that the population of cities with 20,000 and more increased about 80 per cent in the period 1947 - 1957, and by 65 per cent in the period 1957 - 1965. However, the number of such towns increased from 11 to 22 in 1965 and their total population from 1.06 million in 1947 to 3.30 million in 1965, thus indicating a growth of 210 per cent in this period. Whereas

Table 3.7 Distribution of towns according to their size by Liwa in 1965

Liwa	1,000,000	200,001- 400,000	100,001- 200,000	50,001 - 100,001	20,001- 50,000	10,001- 20,000	5,001 - 10,000	2,000- 5,000	2,000
Mosul		1			1	2	5	6	21
Sulaimaniyah				1		1	2	4	13
Arbil				1		1	2	4	9
Kirkuk			1		2	1	3	5	8
Diyala					2	4	2	3	7
Ramadi						1	5	3	1
Baghdad	1					2	4	5	3
Kut					1	2	2	5	3
Hillah				1		2	4	4	3
Karbala			1	1	1			1	2
Diwaniyah				1	1	2	6	4	8
Nassiriyah				1		2	3	4	6
Amarah				1			2	7	2
Basrah		1			2	3	2	3	2
TOTAL	1	2	2	7	10	23	42	58	88

Source: Central Statistical Organization, Ministry of Planning, Annual Abstract of Statistics, 1965, Baghdad.

Table 3.8 A frequency distribution of the number of cities and towns of Mesopotamia by size for the years 1947, 1957, 1965.

Size of Towns	No. of Towns	Total Population in 1947	%	No. of Towns	Total Population in 1957	%	No. of Towns	Total Population in 1965	%
400,000	1	503,000	12.16	1	1,000,000	15.8	1	1,620,000	17.48
200,001-400,000	-	-	-	-	-	-	2	556,638	6.7
100,001-200,000	2	235,073	5.65	3	463,521	7.3	2	215,509	2.6
50,001-100,000	2	124,561	2.57	4	257,366	4.08	7	411,052	4.9
20,001- 50,000	6	202,220	4.30	9	287,656	4.5	10	334,340	4.0
10,001- 20,000	12	168,854	4.12	13	181,565	2.8	23	313,895	3.79
5,001- 10,000	23	161,307	5.20	31	226,573	3.59	42	289,653	3.5
2,001- 5,000	46	160,006	10.59	47	159,483	2.5	58	181,193	2.19
Less than 2,000	87	72,536	55.40	87	81,242	1.3	88	84,875	1.02

Source: General Censuses for Iraq 1947, 1957, 1965.

there were only three cities of 100,000 or more in 1947, their number rose to 5 in 1965 and reputedly to a dozen in 1971.

Baghdad the capital has grown even more spectacularly from over half a million in 1947 to more than two millions at present.

One can thus perceive, from the historical trends briefly discussed above, that a further substantial increase in urban population is inevitable in the coming decades. The urban rate of growth is likely to be more than three times the national rate. The United Nation's population estimates for Iraq indicate that, by 1990, the population may be anywhere between 19.32 and 20.73 million. However, the urban estimates for the same period vary between 13.8 and 15.2 million depending upon several factors. This would mean that the urban population is likely to multiply, at least three times and probably more.*

From these trends one can visualize the enormous efforts, investments and land requirements necessary for absorbing such a large increase expected to occur within the brief period of less than the next two decades. If the present trends are to continue unabated, Baghdad alone will claim nearly 40 per cent of all the country's population by 1990. Unplanned drift is continuing from the rural areas to the urban centre, robbing the countryside of its agricultural manpower, and in addition, putting

* The rate of the population increase, both urban and rural has been variously estimated, urban growth for 1947 - 1957 being 3.69 per cent rising to 4.91 per cent for 1957 - 1965. This is perhaps a record rate in a world context. The percentages of rural increase were 2.26 per cent and 2.27 per cent for the two periods respectively. The official forecast employed by the authorities of Iraq in their plans and other announcements are based on the assumptions that the population will increase by 2 per cent per annum. According to official Iraqi data the population of Baghdad will be 2.4 million in 1990, whereas based on the forecast by L. Jones, the population will be 5.5 million in the same year. However, it is very likely that both figures are unrealistic.

enormous strain on the problem of urban growth. The situation, therefore, makes it essential that adequate attention should be paid to the anticipated growth of Mesopotamia's towns. Nearly 71 per cent of the last five-year plan's (1965 - 1970) allocation of I.D. 821 million was to have been invested in the urban sector of the national economy,¹⁰ yet the growing towns of the country are suffering from the absence of many important urban amenities enjoyed by European towns.

Examination of the previous tables, shows that the problem of Mesopotamian urbanization is two fold. Firstly there is the continuing concentration of population in towns, and secondly the imbalanced spatial distribution of their population. This unjustifiable distribution no doubt has its negative influence on the whole socio-economic set-up of the country.

It is clear therefore, that the country requires a comprehensive plan at different spatial levels and with multi-purpose orientation. Cities and towns must be viewed within the larger Mesopotamian context, each town having a defined role within the whole hierarchy of communities, and making its specific contribution towards the nation as a whole. In the broad spectrum of Mesopotamia there should be cities and towns of various sizes with a wide variety of roles, depending upon their functions and locations, and each offering its own social, cultural and economic benefits to the country. Only with such an approach can the painful and striking contradiction between rural and urban areas be replaced by a positive relationship between the two, which should, in fact, be complementary in nature. Con-

sequences of laissez-faire, spontaneous urbanization must be curtailed.

منطقة الخوانسار
الخوانسار

From a geographical point of view, Mesopotamia provides an ideal setting for such comprehensive nation-wide plan, with three cities forming well defined urban regions, i.e. Baghdad in the middle, Mosul and Basrah in the north and south respectively. Sub-regions could also be defined, for example, those with Kirkuk and Sulaimaniyah in the north and Diwaniyah in the south as centres.

There exists a fairly good communication network, but this will need to be integrated within the framework of the national plan.

Fortunately Mesopotamia has great opportunities to realise any socio-economic and physical plan because of its great variety of regional endowments in natural and other resources.

Finally, it is to be hoped that Mesopotamia will learn from the experience of developed countries and avoid costly mistakes, and that it will make use of the better methods and more advanced technology available today.

The Urban Hierarchy in Mesopotamia:

Before going into the details of the present urban hierarchy in Mesopotamia, it will be instructive to look at the historical position in the centuries before 1920. It so happens that there is a most useful morphological element in Iraqi towns to bear on the urban hierarchy during the ages of when caravans were the only means of land transportation, and that is the khans as relict feature from those times. It forms a useful indicator of former town rank through the details of its distribution pattern viz. its number and concentration in various towns. It also forms a viable link with Iraq's present life since in the larger towns at least khans are by no means merely

البيوت الخوانسار

Fig.3.7 Khan Bani Saad

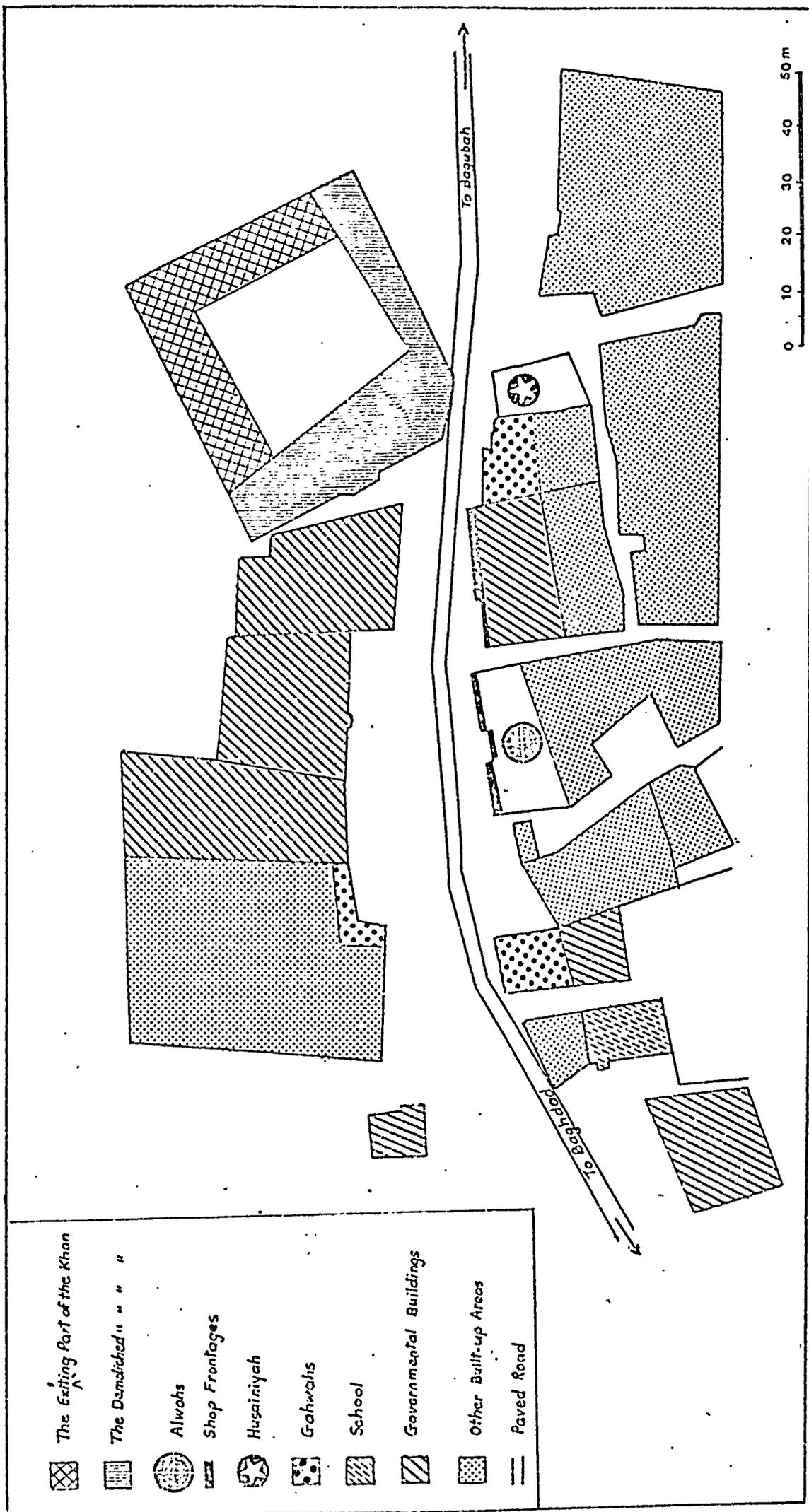
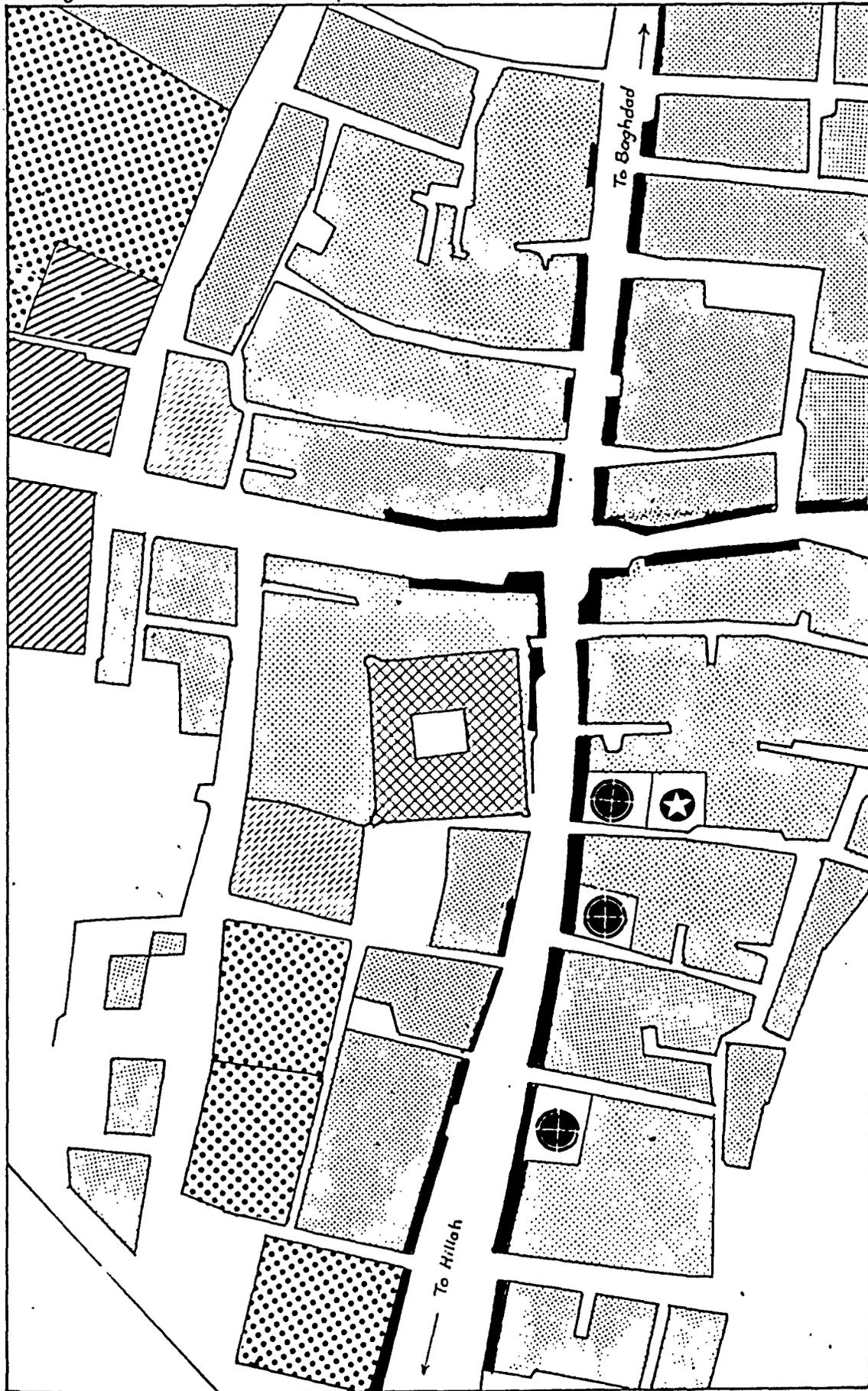


Fig. 3.6 Al-Mahmudiyah



- | | | |
|--|--|---|
|  Khan al-Mahmudiyah |  Alwabs |  Shop Frontages |
|  Mosques |  Schools |  Governmental Buildings
Including a Hospital |
|  Other Built-up Areas |  Orchards | |
- 0 50 100 m

Fig.3.5

The Old Town of al.Najaf
(Street Plan after a Map in the
Planning Department, Ministry of
Municipalities.)

-  The Shrine of Imam Ali
-  Built-up Sanctuary
-  Bazaars
-  Khans
-  Existing Town Wall
-  Lines of the Former Town Wall
-  Sites of Town Gates
-  Break-Through Streets
-  Cemeteries

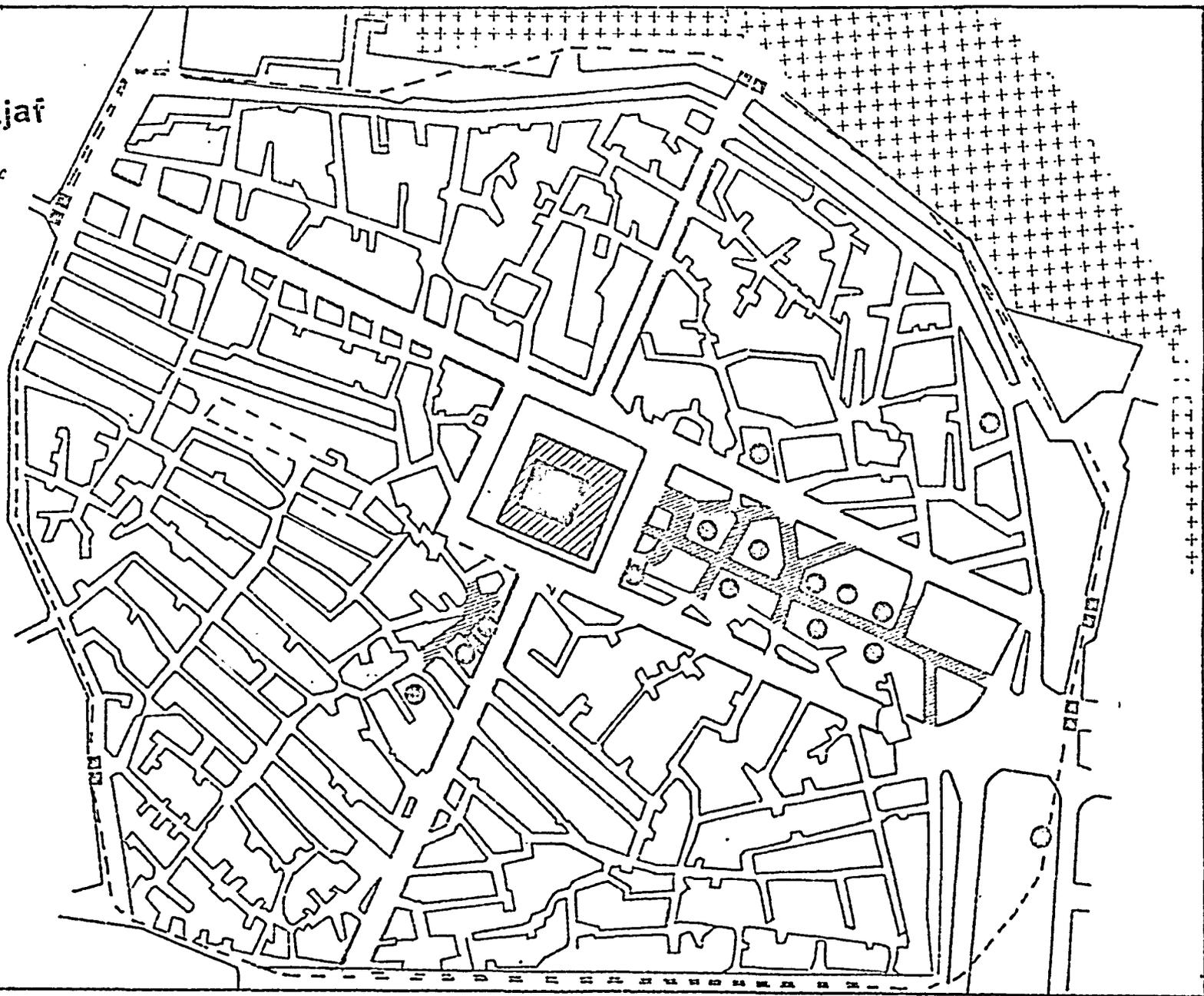
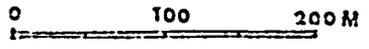
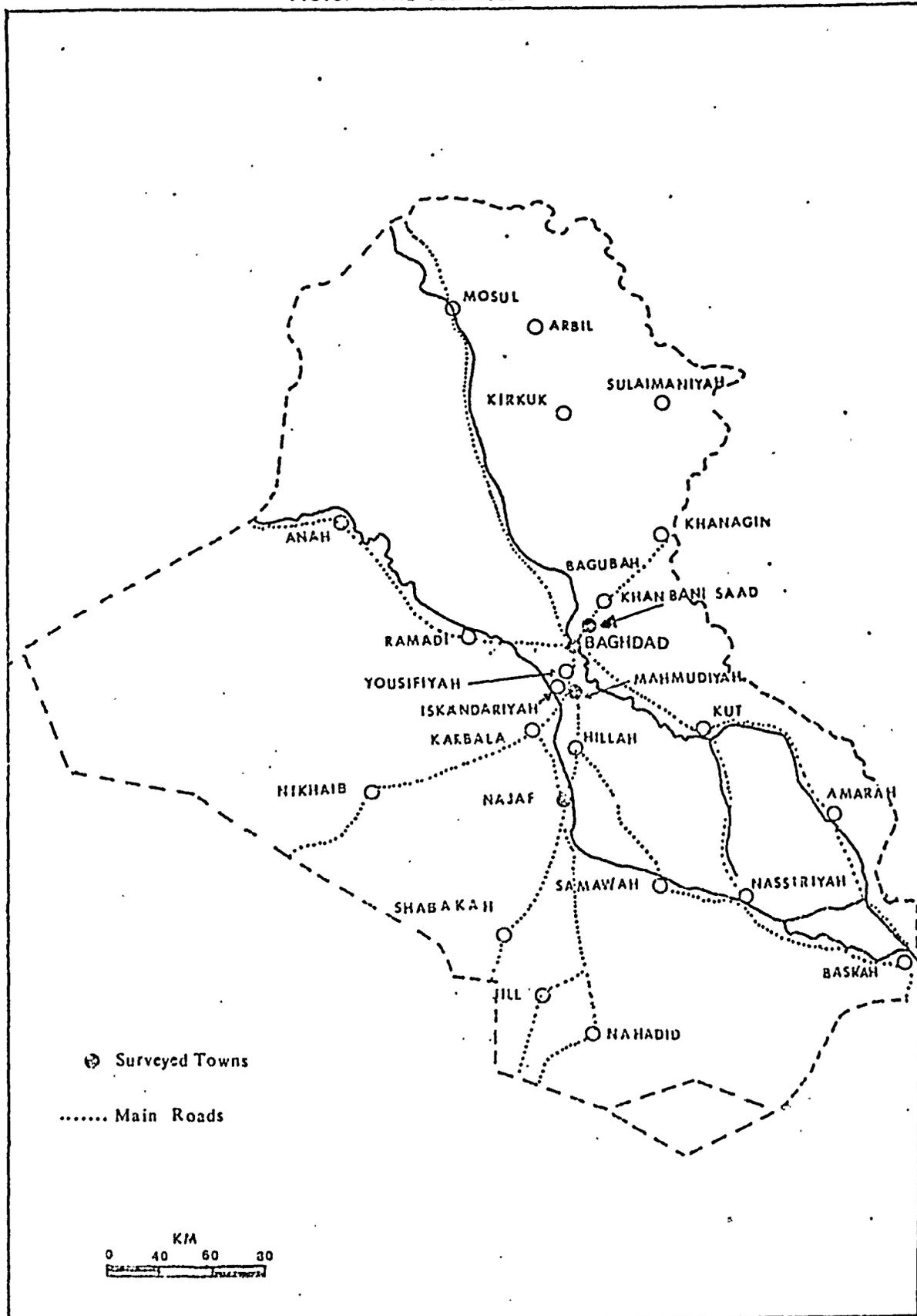


FIG.3.4 THE SURVEYED KHAN TOWNS



relict features from the past but still surprisingly fulfill important functions.

Studying khan distribution on a national scale will also shed more light on the commercial importance of the city of Baghdad in the context of Iraq's urban hierarchy.

Khans can be used as a criterion in ranking historic Iraqi towns, their number, age, size and type of construction being very sensitive indicators for the purpose. Whether they conveyed merchandise, travellers or pilgrims, caravans frequented a number of towns along well-defined routes and for various reasons. The degree of centrality of towns, i.e. their accessibility and frequency of caravan calls, determined the number and locational pattern of khans in each town. Functionally and morphologically caravan towns are influenced by the construction of khans.

It should be noted that because of the complete lack of research on this aspect and the non-existence of statistics about khans in any of Iraq's towns, a simple classification into but four types is offered, although Iraqi khan towns could be divided into a greater number of ranks. It has been possible to discern the following ranks of towns: Multi-Khan towns of the first rank represented by Baghdad only (119 khans); multi-khan towns of the second rank exemplified by Najaf (15 khans); single-khan towns of third rank as e.g. Mahmudiyah; and single-khan towns of the fourth rank as Khan Bani Saad. All the places just mentioned were surveyed by the writer in 1971 (Figs. 3.4, 3.5, 3.6, 3.7). The long distances between Baghdad and other cities, and the primitive type of transportation imposed progression by stages on caravan movements and led to the development of what may be called stage khans at regular intervals.

In Iraq the construction of such stage khans frequently attracted urban development. Some of this accretionary development was big enough

to produce towns, as for example al-Iskandariyah developed around its khan built in the 13th century by the Persian Prince¹¹ Husain Khan to serve the pilgrims to the holy places of Karbala and Najaf.

Such khan towns developed to various sizes, but generally khans at distances of 90 - 120 kms became settlements of higher order, such as Hillah, Ramadi and Najaf, and serve a larger trade hinterland.

On the other hand, khans at medium distances of 50 - 60 kms apart grew up as medium-sized market towns such as al-Mahmudiyah, while those khans at distances of 25 - 30 kms apart have either evolved as small towns such as Khan Bani Saad and al-Yusifiyah or developed as stage khans without settlements. This locational model is clearly seen in the central area of Mesopotamia, where the land is a plain, and the caravan was the main means of transportation.

If one goes to the south, however, the hierarchy of khan settlements and their spacing are quite different from those of the central region. This is because rivers, canals and marshes were the main spacing factors of settlements in the southern region.

Also if one goes further to the north, where the area is mountainous, the pattern will be found to be different again from that of the central and southern regions.

The khans along the caravan routes were built for various reasons. Religious motives were one of the most important reasons for building khans all over the Islamic world, particularly along roads leading to religious places. Some of these khans had a well in the middle and could accommodate 300 or 400 men.⁽¹²⁾ Many of such khans were built by wealthy pious people.

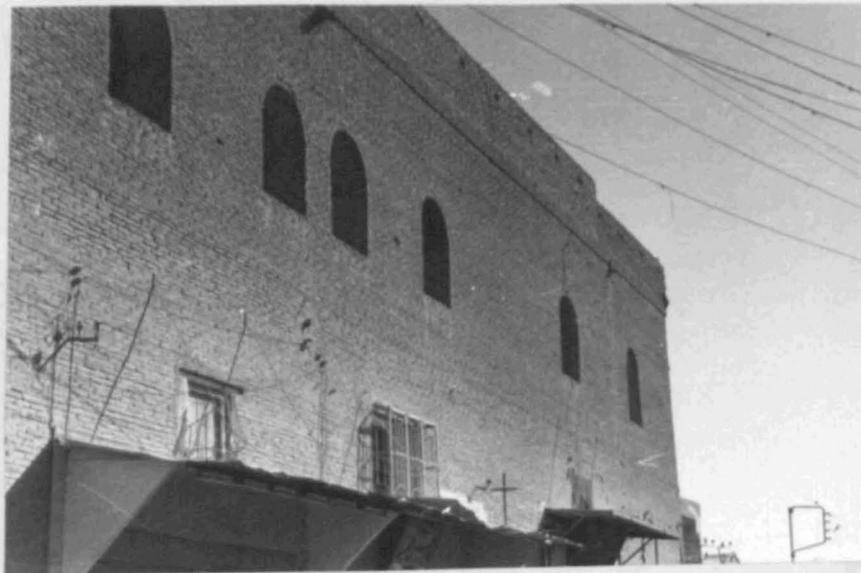
Governors themselves sometimes endowed towns with khans among many other institutions such as schools and hammams. They also built khans along caravan routes between religious centres.¹³

Handwritten notes in Arabic script on the left margin, including the word 'تقسيم' (division) and 'مناطق' (regions).

Fig. 3.11



a. A central khan in al-Najaf partially destroyed



b. The existing Khan al-Hinud (Indians) in al-Najaf

Fig. 3.10



a. A new break-through street around the shrine of Ali

the old street was partially destroyed

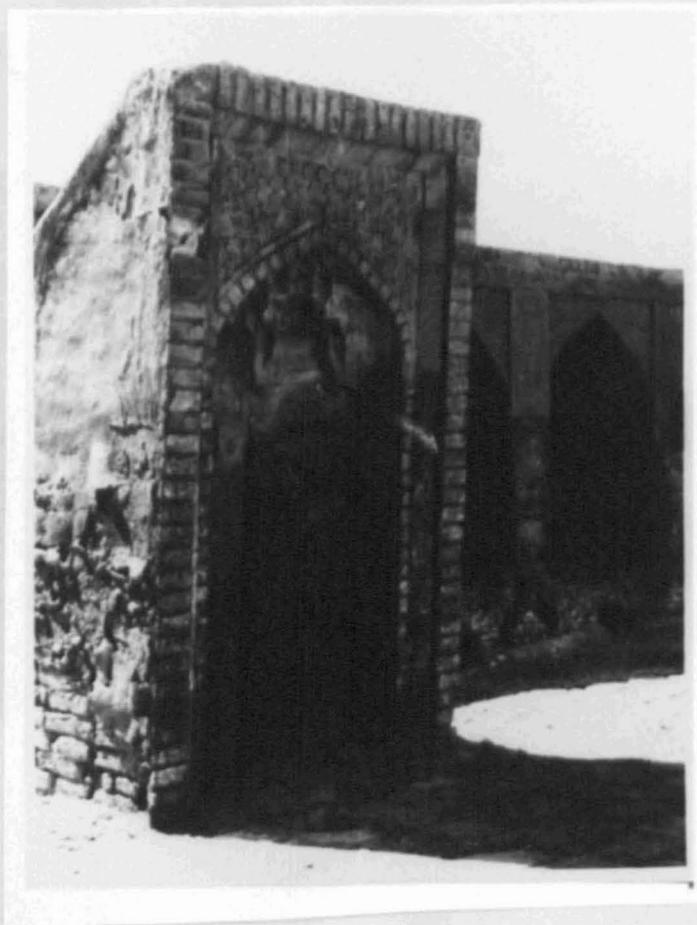


b. A typical post-1920 street in al-Najaf

Fig. 3.9



a. Khan Bani Saad looking north-east



b. The chapel of Khan al-Mahmudiyah looking south-west

Fig. 3.8



a. One of the stage khans between Karbala and Najaf



b. An internal view of the same khan

c. The chapel of the al-Bukhariyyah looking south-west

There are people who act as pilgrimage agencies transporting, housing and serving pilgrims who travel between the holy cities of the country and between Iraq and other countries.

At present, the caravan khans fall into two categories; some are out of use, such as the khans between Karbala and Najaf, which also failed to attract a distinct urban settlement (Fig. 3.8). Elsewhere towns had developed around the khan, but the khan itself has been neglected and sometimes has fallen into disrepair like that of Khan Bani Saad (Fig. 3.9).

الخان
الشيخ
العلي

Khans on caravan routes are important historical monuments reflecting a characteristic stage in the cultural and economic development of the nation. Mostly, in design, they were constructed like the cloisters of monasteries, divided into chambers, each with a door and a lock. It is the responsibility of the authorities concerned to restore some of these stage khans as part of the national heritage.

Najaf, Mahamudiyah and Khan Bani Saad represent the second, third and fourth ranks respectively in the hierarchy of the khan towns of central Iraq after Baghdad (Fig. 3.4).

Najaf is a multi-khan town of the second rank after Baghdad in the hierarchy of khan towns. The city grew up in the desert round Ali's tomb, over which the faithful built a great mosque with golden domes and minarets. The main development took place after 786(170) (Figs. 3.10, 3.11a,b).

Al-Najaf has perhaps the largest expanse of cemeteries in the world as a result of being considered the foremost holy city of Iraq. Al-Imam al-Sadiq said that "a prayer beside the tomb of Ali is equal to 200,000 prayers elsewhere". Ali, the fourth caliph after Muhammad, was buried in this spot in 657 (40)¹⁴. Thus it became the most sacred place for Shiahs, who accordingly took to the tradition of burying

Fig. 3.12



a. A small section of al-Najaf town walls
(in need of restoration)



b. A view of al-Najaf's vast cemeteries

their dead in the soil of al-Najaf, inspired by the belief that Imam Ali would testify for them on Yawm al-Qiyamah, the day of judgement. Little wonder therefore that Najaf became the second Mecca for Shiahs.*

The first shrine was built by Harun al-Rashid, 772.¹⁶ Since then it has been rebuilt, enlarged and beautified frequently, by Arab and foreign individuals, and by government bodies.

At present, more than 66 funerals converge on Najaf every day from all over Iraq for burial at the sizeable cemeteries now in a much better sanitary condition than they were before the Second World War (Fig. 3.12b).¹⁷

It is traditional for family and friends to accompany a funeral to al-Najaf. The number of cars following the funeral vary according to the social order of the deceased.

The city of al-Najaf has been influenced to a great extent by the funeral industry which has increased the importance of the khan to the city, as the major accommodation places.

Caravans of corpses used to travel heading to al-Najaf from all over the Moslem Shiah world, particularly from Persia. This old method of corpse transportation had its own health hazards when corpses deteriorated, promoting various kinds of diseases. Thus Iraq frequently made agreements with Persia to organize the transportation of the dead. For example, the agreement between Midhat Pasha and Persia in 1869-1871 laid down that only corpses which had been buried in Persia for at least a year were to be allowed to enter the country. To bury the dead immediately and transfer them after

* According to the Shiah creed Ali is a semi-divine figure, greater even than Muhammad himself. To the original Moslem declaration of faith "I affirm that there is no God but God, and that Muhammad is the Prophet of God" the Shiah add "and that Ali is the vice-regent of God"¹⁵

and the one year is known as Amanah (in trust). Obsequious ? transfer was unknown in Islam before the 16th century A.D.¹⁸ In the 20th century, the government of Iran has closed its border and turned the stream of dead bodies towards the Iranian holy cities of Qum and Mashhad.¹⁹ However, corpses continue to be smuggled across the long and uncontrolled borders between the two countries.

At present, there are about 1,000²⁰ Abu Nubahs i.e. burial agencies (undertakers). An Abu Nubah is a man who has bought a particular piece of land from the municipality of al-Najaf to use as a cemetery. The burying process is carried out by a trained worker known as daffan (grave digger). Each grave is dug at a cost of 1,500 fils. The process takes between $\frac{1}{2}$ an hour and an hour. The municipality levies another 500 fils, and the Abu-Nubah charges another 1,500 fils. This puts the total cost of burial of a poor person at about $3\frac{1}{2}$ I.D., but the cost of a single grave can be more than 1,000 I.D., usually reserved for the wealthy. In such graves, a decorated basement (sirdab) and dome are perhaps built and occasionally a telephone system for use by visitors, will be installed.

The legal period for burying is between 10 a.m. and 5 p.m., but in practice the operation takes place at any time.

السنة الحادية عشر
As a result of its religious importance al-Najaf has become a major commercial centre, particularly as it is located at a major caravan stage to Mecca. This importance is appropriately expressed in the development of a number of khans. Until the second quarter of the present century, Najaf had 15 great khans. Most of these were built long after the construction of the shrine of Ali, because in earlier times the number of visitors was limited by the primitive method of transportation and the few visitors could be lodged within the confines of the sanctuary. As a result of the increase in the number

of visitors however, decisions had to be taken prohibiting the use of the sanctuary for lodging, and this helped to multiply the number of khans which had been few and were catering only for merchants.

The chief khans of Najaf are located alongside or behind the frontage of al-Suq al-Kabir (the big bazaar) (Fig. 3.5) which consisted originally of stables for horses and beasts of travel. During the Ottoman occupation, it was re-built as a fine bazaar being an endowment property and starting from the east gate of the shrine. Individuals have however, encroached upon it, as governmental control was corrupt, and the bazaar has become privately owned.

Four of the fifteen khans of Najaf have been either completely or partially destroyed as a consequence of the construction of break-through streets (3.11a). Another four khans have changed their functions, two of them now accommodating confectionery firms and the other two having been changed to schools. This has resulted in essential physical, particularly internal, changes. Two of the remaining khans have been repleted by new buildings somewhat in the manner of some of the khans of Baghdad (cf. Ch. 15), serving as merchants' offices and store rooms. The peripheral rooms have been changed into shops.

The remaining five continued functioning as commercial khans proper and are used mainly as warehouses.

At present and after the vicissitudes of its long history, the city of Najaf has developed major suqs, more than 100 mosques, most of which are in the old mahallahs, more than 18 religious schools, some of which are run by Iranians, more than 30 modern schools for girls and boys, and more than 10,000 houses. Its population in 1965 was 128,096. Najaf is a great intellectual centre in Iraq, has more than 34 celebrated libraries, and is considered the second printing centre after Baghdad, with 13 printing works and 20 newspapers.²¹

Like Baghdad, Najaf is a dual city; the Old Town round the sanctuary of the Imam consisted of four mahallahs, of which al-Mishraq and al'Imarah* were the most favoured residential areas as they were located between the holy sanctuaries of Najaf and Karbala (Fig. 3.5).

These four old mahallahs are characterised by their traditional Arab courtyard houses, zuqaqs and agids, bazaars, khans, hammams and mosques, each of which is named after a pious man or tribe.

Until the 1930's Najaf was a walled city of roughly circular pattern. In 1928, the walls, built in 1811 of stones, bricks and mortar, were partially knocked down. Originally they have two gates, one on the Kufah highway, and the other on the Mecca caravan route. The wall was fortified by towers at appropriate intervals and pierced by many holes for defensive purposes.

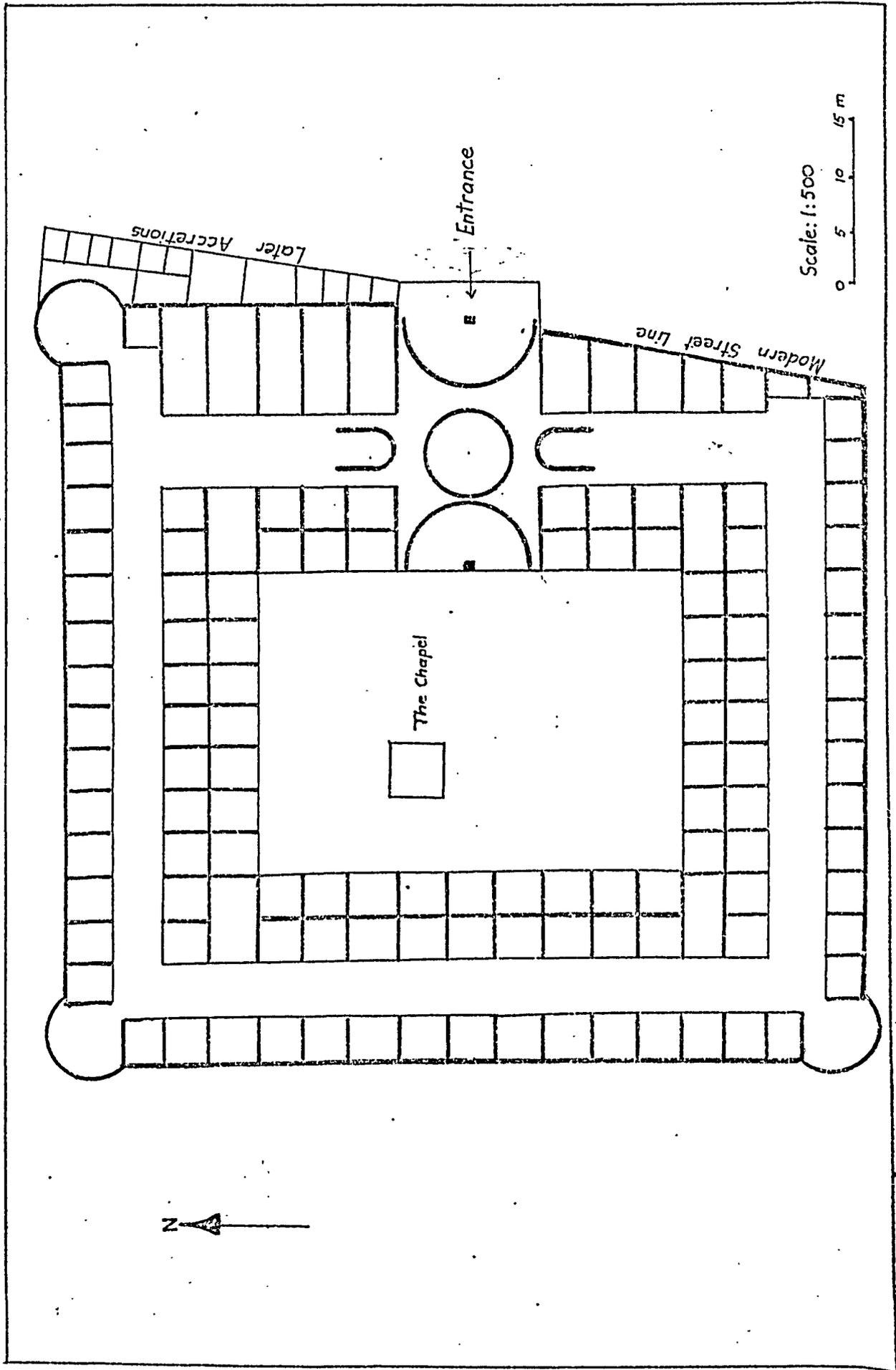
In 1971 the writer found that particular stretches of the wall still existed. On average their width is about 2 m. (Fig. 3.12a).

After the first world war, Najaf became subject to some modernization. Hospitals, schools, break-through streets and squares for motor vehicles, a water supply, electricity, and suburban development were introduced to the city, particularly after 1930.

The first modern suburban mahallah, al-Ghaziyah, developed in a sprawl pattern to be followed after 1956 by the most modern mahallah, al-Saad, with its climatically inconvenient gridiron street system. This mahallah is still growing rapidly along the highway between Najaf and its twin settlement of al-Kufah, the other holy Shiah city. Modern developments now exceed the old nucleus of the traditional city in size.

* Al-Buraq and al-Hwaish are the other two mahallahs.

Fig.3.13 AL- Mahmudiyah Khan



At present, Najaf is the religious capital of all Shiah. The highest Shiah Imam is based in Najaf and his pronouncements are respected by all Shiah. Consequently it has a vital political significance, as may be seen in the past and contemporary history of the country.

Mahmudiyah represents the third rank in the Iraqi khan town hierarchy (Fig. 3.4, 3.6, 3.9b, 3.13). In 1608, Mahmud Pasha, the then Wali of Baghdad built a small village on this site, from which the present town derives its name.²² The village did not grow until the establishment of its khan. The monumental edifice was built in 1870*. It was built by Jaafar al-Husaini for religious purposes as an overnight stage khan where animals were changed for fresh ones. It has a series of liwans (porticoes) and 100 rooms surrounding a sizeable courtyard in the middle of which there is a chapel (Fig. 3.13). Two wells were dug in the khan which soon attracted other developments such as housing and commercial establishments. A police station was built as well as a hammam annexed to this khan. In 1917 the khan was used by the British troops as a fortress. During this time its condition began to deteriorate. In 1927 the government of Iraq considered the whole area of Mahmudiyah to be state land and took over the khan without compensation.²³

This khan has its own summer and winter chapels, stables for animals and rooms for residences. A school has recently been built on the site of the khan's cemetery. By 1947, the settlement had grown to a population of 2,300.²⁴ Because of the discontinuation of caravans passing through Mahmudiyah, the khan, situated at the intersection of the two major streets is now completely neglected

* It is interesting that there are the remains of an Abbasid Khan of Azad, now al-Hurriyah on the same site further evidence that this route is one of the old caravan routes through the country.

The town, recently promoted to a Qadha centre, is a thriving market town within the orbit of Baghdad. Its population is now more than 10,000, i.e. more than 3 times its size in 1947. The town now has a grand mosque built in 1935, a hospital, and six schools.

Permanent surfacing of the road to Baghdad in 1953 and the recent establishment of a regular bus route linking the town with Baghdad have contributed to Mahmudiyah's modern expansion. Recently a new bicycle factory has been established here which will aid the town's rapid growth.

The lowest (fourth) rank of khan towns is exemplified by Khan Bani Saad (Fig. 3.7/^{3.9a}). In 1678, Ahmad Bushnak built the famous Khan of Bani Saad²⁵ along the Persian caravan route. This and similar khans were built for short rests, usually for the noon siesta. It lies about half way between the khan towns of Baghdad and Bagubah and has attracted a permanent settlement which grew to become a Nahiyah centre within Diyala Liwa, playing the role of a very small market town with a population of 1,195 in 1965. Its great khan has been brusquely and unnecessarily destroyed in the construction of the modern highway to Iran. Because of its proximity to Baghdad and Bagubah and the development of modern transportation, it has failed to grow to the same extent as Mahmudiyah on the highway to Hillah.

Mesopotamia has many different sized towns having different functions serving greater or smaller areas. The Iraqi settlements vary from a cluster of less than 15 houses to the closely spaced small villages particularly near the rivers, to townlets, towns and cities, which serve wider tributary areas, and culminating in the capital city of Baghdad.

Urban centres are defined as administrative centres, which have municipal status, with a population of 2,000 and over.²⁶ It is important to introduce, at the start, the concept of centres of different grades according to their size. Seven such grades are postulated: (Fig. 3.14)

- | | |
|----------|--|
| Grade 1 | The Capital, over 1,000,000 population. |
| Grade 2 | Major liwa centres and al-Najaf city, over 100,000 population. |
| Grade 3a | Provincial centres of population between 70,000 - 100,000 |
| Grade 3b | Provincial centres of population between 50,000 - 70,000. |
| Grade 4 | Small provincial centres and major Qadha centres of population between 20,000 - 50,000. |
| Grade 5 | Medium Qadha centres and major Nahiyah (the smallest administrative centre) centres of population between 10,000 - 20,000. |
| Grade 6a | Small Qadha centres and medium Nahiyah centres 5,000 - 10,000. |
| Grade 6b | Small Nahiyah centres of population between 2,000 - 5,000. |
| Grade 7 | Small urban-type settlements or townlets (Nahiyah centres) of population below 2,000. |

The typical Iraqi village contains more than 15 households, with an average of more than 5 persons each. Iraq villages numbered 9918 in 1960. Money income is too low to support commercial enterprises other than a gahwah for men, and perhaps a rudimentary shop selling commodities such as tea, sugar, tobacco and matches. In effect even these two types of enterprises do not exist in many villages (Qariyahs). In a village within commuting distance of the cities new ideas and aspirations enter along with increased incomes for industrial employment and rising land values. Such villages exhibit living patterns midway between traditional village dwellers and those of the urban poor. Administration can also be used as an indication of rank in the urban hierarchy (Fig. 3.15).

In Mesopotamia, liwa and qadha boundaries have been recently reconstituted from the previous Ottoman provinces, and adjustments are still being made. Towns are also usually well spaced; the only incipient conurbations being Greater Baghdad and the Basrah - Zubair - Abu - al-Khasib agglomeration.

Administratively, the Iraqi towns range from the Nahiyah Centre D to Qadha Centre C, to liwa centre B to the Capital A which is above all these ranks.

The local administration in the fourteen liwas of Iraq is linked to the Ministry of Interior. Each Local Government Authority has general responsibility for supervising the regional work of all the national ministries. It also has the total responsibility for rural areas, i.e. administration, development and upkeep. The Mutassarif (governor) of a liwa, an official of the Ministry of Interior, is the highest official in the liwa.

He represents all ministries in his liwa and can be authorized by different ministers to act on their behalf. At present Iraq has 156 nahiyahs and 63 qadhas. They are presented in (Appendix B) and (Fig. 3.15) excluding settlements less than 2,000 inhabitants.

The liwa centres form the regional capitals which include Baghdad, 3 in Grade 2, all the centres of Grade 3, and 3 centres of Grade 4.

However, in Karbala and Ramadi Liwas, there exist towns larger in population than the liwa centres themselves, such as Najaf and Fallujah for the first and second liwas respectively. Fallujah is the main market centre for a wide area and is located on the Syrian highroad; whereas Najaf boasts this rank because of its stable religious function.

Size, therefore, is not always an exact indicator of administrative status. Many nahiyah centres are higher in population than their qadha centres. The smallest nahiyah centre has 162 inhabitants and 58 have under 5,000. Such sizes would not represent a town in many other countries.

It is far from satisfactory to rely either on size or administrative status as criteria for measuring settlement and for classifying their urban status. In seeking more satisfactory criteria, it is well to take account of the essential functions of towns and institutions discharging them.²⁷ In the case of Iraq, function cannot be used precisely in urban definition owing to the lack of such useful data as are available for British towns. The definition of urban status in Iraq seems to

to lie in the acquisition of certain administrative, commercial and religious functions, embodied in the morphological features of al-Sarai (the main administrative complex), bazaar and Friday mosque. The elaboration, size and number of these three elements indicate the real rank of the settlement, which is influenced by the number of population and the function of the settlement. Iraq, however, needs such studies to define its towns on more indicative bases. Virtually all towns in Iraq have been classified by rank on the basis of size and administrative order, whereas in European countries service provision has been included in such classification. Smailes in Britain, for example, has adopted the service method to examine the status of the towns.²⁸

If such a scheme could be devised for Mesopotamia Baghdad and Basrah would appear high on the list as they are far advanced. They provide a wide variety of services, both of modern and traditional types.

Similarly, if accessibility by public bus services could be mapped, as has been done in England by Green, who suggested five orders of towns,²⁹ and Carruthers,³⁰ who studied the classification of service centres, a hierarchy of bus centres could be drawn up. Because timetables are rarely written down and because services in Iraq are erratic, such data for this type of classification would be difficult to obtain. In contrast to Britain, with almost all its parts accessible directly by public road transport from one of its "service centres",³¹ the majority of the Iraqi towns are not served by such services. However, the

14 liwa centres and a few other gadha centres have recently developed bus services, but these are unsatisfactory and do not cover the surrounding areas. Moreover, many towns in Iraq are not connected by railways and private cars are few outside the larger towns. However, taxis, mini-buses and large buses compensate to a great extent the deficiency in public bus services.

It is also important that, though Iraq had three general censuses, none of them publish data about the hinterlands of urban centres. These censuses provide general numbers of rural and urban population according to administrative units, without a clear definition between the two, even in the case of Baghdad. The difficulty is further exacerbated by the absence of statistical data about the professional structure of the rural and almost all the urban areas.

All this must be considered when a hierarchy based on accessibility or services is prepared for Iraq.

Commercial activity can be used in ranking the Mesopotamian towns. In contrast to Britain, where the market ceased to be the most accurate measure of the status of a town, commercial activity is the main criterion in Iraq to define whether a settlement is urban or not.

Practically all urban centres of Mesopotamia are market towns for different-sized areas. They are the main collecting points for the products of their surrounding territories, and the main distribution centres for goods from outside. The commercial activity of these towns is reflected by the bazaar structure. The bazaars of market towns vary from the primitive as in Nu'maniyah in Kut Liwa, to the very complex and well

developed bazaar structures of Basrah and Kirkuk.

One has to note that practically there are no towns which play a role only as market towns. Usually when a market centre is born in the countryside, it turns into an administrative centre. Thus almost all market towns in Iraq play at least the functions of market towns and administrative centres. In addition to these roles many of the market towns are centres of religion with major or minor mosques. It is rather rare to find a clear industrial function in such towns, though certain craft industries may be developed eventually.

The major market towns in Mesopotamia are practically all capitals of liwas. They are on average 160kms from each other. There are 123 traditional market towns in Iraq ranging in population from 2,000 - 20,000, they include 23 towns of Grade 5, 42 towns of Grade 6a and 58 towns of Grade 6b. (See Appendix C) The distances between these market towns vary greatly, according to the economic structure of their regions. It is only with detailed study that it will be possible to define the distances between market towns of different sizes and the areas they are serving. At the present time it could be said that market towns of 10,000 - 20,000 may serve areas with a radius of several tens of kms. Whilst minor market towns may serve very small areas, possibly not exceeding a diameter of 10 kms. Market towns are usually not well developed, especially those which have arisen recently. Some important ones may be well developed according to outdated notions of development, but these do not correspond to modern requirements of public health, traffic and

social amenities. It can be said that market towns as a whole are very deficient in services thus presenting many problems for their inhabitants and the surrounding population which is served by them.

The market towns of Mesopotamia are usually located where people from the countryside can visit them by leaving their homes very early in the morning and returning to them at sunset. With an average day of 12 hours, in a country where there were no good transportation facilities, people could not visit market towns only at a distance of 20 - 25 Kms from their homes. Thus the major towns are separated by distances of 40 - 50 kms.

With the introduction of new methods of communication after the 1940's, people have been able to visit at a much greater distance by using a bus service, lorry or even their car. This has led to changes in the whole pattern of countryside market centres. Several major towns and medium ones, 60 - 90 km apart flourished. Some other market towns declined when some of their inhabitants migrated to other rising centres. Furthermore, there are other towns with a decreasing sphere of influence yet with their population experiencing increasing prosperity, and these remained quite stable. Finally, the development of new functions, especially industry and administration have promoted the extensions, growth and birth of new market towns.

Here it should be pointed out that the distributional patterns of towns in both the mountainous and marshy lands are different from what has already been discussed. This is owing to the geographical differences and associated means of transportation.

In terms of evolution Mesopotamia has several categories of market towns. There are towns which have declined such as Rawanduz in Arbil Liwa, Badrah in Kut Liwa and Kumait in Amarah Liwa, others which have been depressed, yet others that have remained relatively stable, and finally developing and new towns.

In spite of the fact that much criticism has been directed against using population as an indicator of urban status in Western countries, it is practical to adopt this concept in this discussion of urban hierarchy. As was found in the case of Iran, Iraq also has reasonably comparable information regarding the population of its town. Also in a country where urbanization and industrialization on a modern scale is only just beginning and where the urban population is only about 50 per cent of the whole, it is obvious that the majority of people in urban places must be engaged in providing services. The analogies existing in manufacturing towns, large in size but lacking in services, have not yet been developed in Iraq, as an underdeveloped Arab country.³²

The 1965 census, the third and best census in the history of Iraq, gives population figures for 233 'urban places', that is, places of over 2,000 population. The urban hierarchy of Mesopotamia is represented in (Appendix C) and (Fig. 314).

Baghdad, the primate city, occupies Grade 1, just as much as Cairo does in the hierarchy of Egypt. In 1968 the population of Iraq's three major cities were in the ratio 100 - 12 - 11. Baghdad is followed by the four major regional centres, namely, Basrah, Mosul, Kirkuk and Najaf, all of which are liwa capitals

with the exception of al-Najaf. Najaf grew in prominence as the main religious centre of Shiah Moslems all over the world, at the same time being a terminus of the desert route to Mecca. These centres are publication centres of either morning dailies such as Baghdad and Basrah or weekly and monthly magazines. Apart from Kirkuk, they are the seats of new universities, which draw their pupils from beyond their regions. They are also centres or sub-centres of wholesale distribution, and main centres of banking facilities.

All the towns of Grade 3 are liwa centres. Two in the northern region, two in the central region and three in the Southern region following the overall distribution of population. The upper group Grade 3a, of this class included Arbil and Sulaimaniyah, the main Kurdish centres in Iraq, Hillah is the main commercial centre of the whole middle Euphrates region, and Karbala is the major religious centre for Shiah Moslems, with a recently developed large modern canning factory.

The lower group of this category Grade 3b included three liwa centres which are located in the southern region. It is indicative of the bad agricultural conditions of a considerable part of the Southern region that its liwa centres appear low in the hierarchy.

All the centres of this rank have medium-sized hospitals and head post offices.

As a major characteristic distances are small between Diwaniyah, Nassiriyah, Hillah, Karbala and Najaf, and between all of these towns and Baghdad. The rivers, traditional roads and

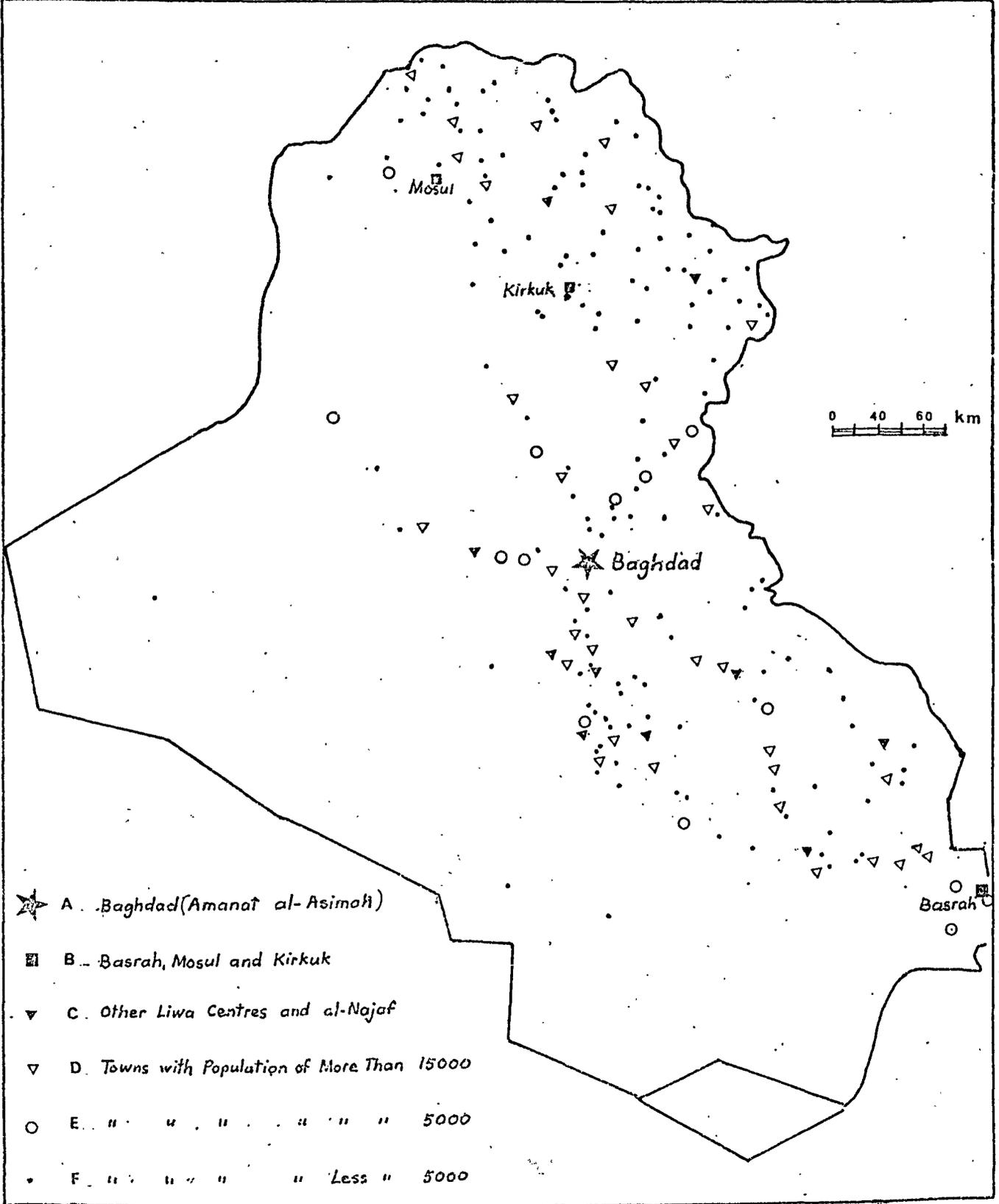
religious factors have influenced such spatial distribution. Najaf and Karbala are big centres of faith. This attracts people and gives them additional importance. All the centres of Grade 1 - 3 offer services of a greater range, e.g. specialist medical advice, cinemas except for the religious centres of Karbala and Najaf, and higher education. Grade 4 comprises ten towns, seven of which are qadha centres, and three poor liwa centres, save Bagubah whose low rank can be attributed to its vicinity to Baghdad. Seven of these centres are in the central region, the other three are widely scattered following the overall distribution of the population.

Fallujah and Bagubah can be considered parts of Greater Baghdad. Kufah has acquired its rather high rank because of its religious function. It can be considered part of Greater Najaf.³³ Most of these towns have recently developed their manufacturing firms and thus show a steadily rising status.

Apart from Habbaniyah-Khaldiyyah which is a nahiyah centre, all the other urban places within Grade 5 are qadha centres. They are widely scattered in the country being respectively 5, 11 and 7 in the northern, central and southern regions. Three of the southern centres are in Basrah Liwa. All these towns are prosperous market towns for their regions. All of them have secondary school institutions and either large dispensaries or small hospitals.

A hundred other towns with populations 2,000 - 10,000 are within Grade 6. All these places are either nahiyah or qadha centres. Thirty towns are scattered in the mountainous area. In the central and southern regions they follow the overall distribution

Fig.3.16 The Hierarchy of Iraqi Towns Based on the Municipal Status



pattern of population, as well as the layout of the river and canal system. 26 of them are located on the Euphrates and its canals, whereas 24 towns are on the Tigris and its branches. Some of these centres have a considerable regional importance. The eighty-eight other places, are nahiyah centres with populations ranging between 162 to 1,972 inhabitants. Their number is presented in (Appendix C) according to their liwas.

Administratively, they are considered urban centres, while in practice they are rather primitive 'urban villages' with certain administrative and very limited commercial importance for their surrounding regions. However, they have primary schools and post offices. Finally, it is possible in Iraq to depend on the municipal status of the Iraqi towns in studying their hierarchy (Fig. 316) According to Article 11 of the Municipal Administration Law No. 165 of 1964, the Iraqi municipalities form six grades, according to population and function within municipal boundaries.³⁴ These sub-grades are classified as follows:-

- Grade A: Baghdad Municipality (Amanat al-asimah)
- Grade B: The municipalities of Basrah, Mosul and Kirkuk
- Grade C: The municipalities of other liwa centres and al-Najaf
- Grade D: The municipalities of towns with a population more than 15,000
- Grade E: The municipalities of towns with a population more than 5,000
- Grade F: The municipalities of towns with a population less than 5,000

The municipalities (baladiyahs) are semi-official authorities charged with all municipal duties and because of their general

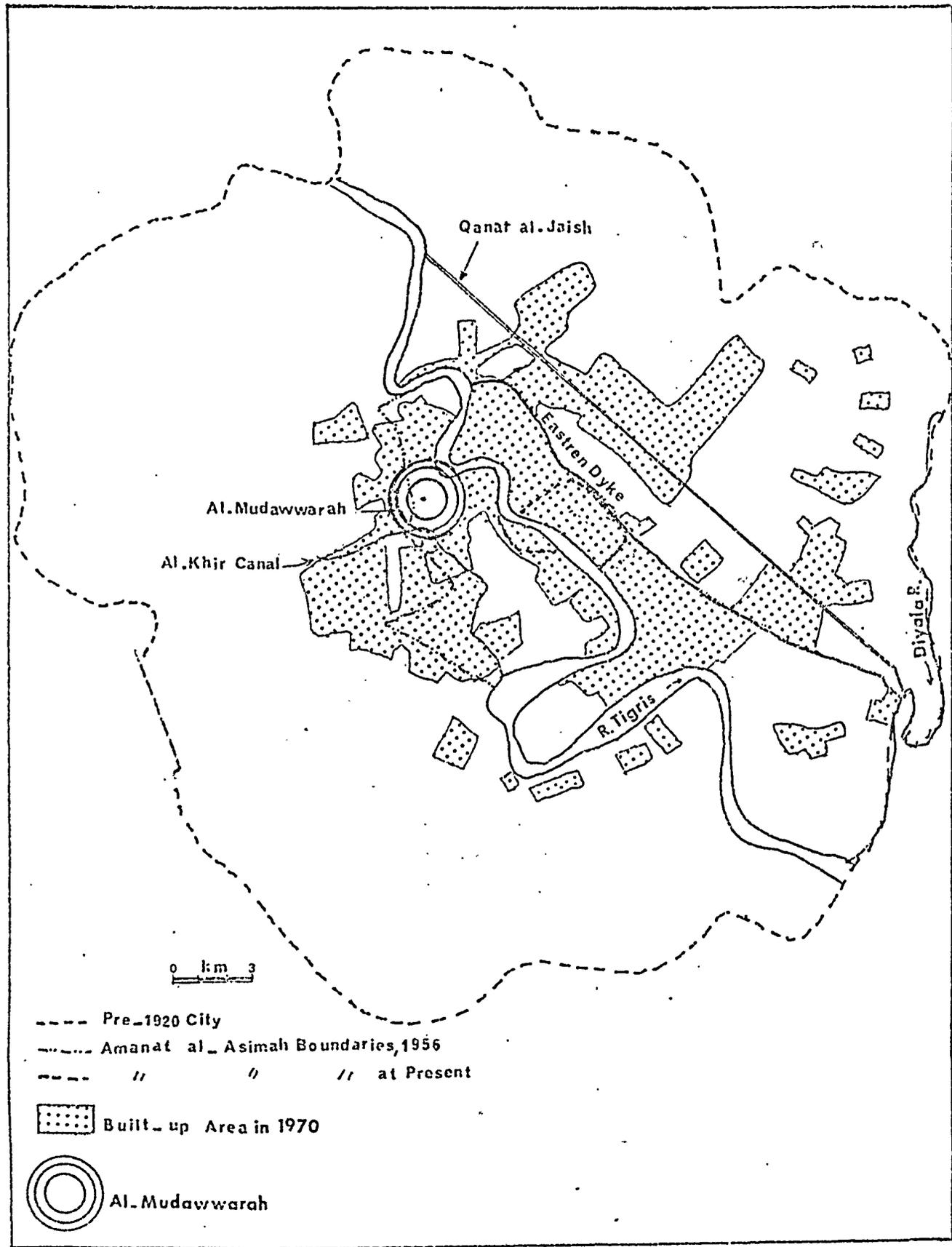
inexperience the individual municipalities are linked to the Ministry of Municipalities through the Directorate General of Municipalities. This Ministry has the added responsibility of supervising the projects and expenditure that come to the municipalities from the General Budget or from the Economic Plan. However, water supply, electricity, telephone and sewage disposal are not the responsibilities of the municipalities. The case of the Municipality of Baghdad is somewhat different from the other municipalities of Mesopotamia. It is classified by law as a 'Distinguished Municipality' which has wide authority and special powers. The Amin al-Asimah (Mayor of the Capital) is linked directly to the Minister of Municipalities, which means that unlike the other heads of municipalities, he is outside the control of the Minister of Interior except in some matters of a special nature. The Amanat al-Asimah has unlimited authority to award projects of all sizes and to undertake projects of all kinds. In addition it enjoys the privilege of contacting directly all municipalities and departments which makes the problem of co-ordination of services somewhat easier. The creation of the Ministry of Municipalities after the 1958 Revolution, completed the independence of Amanat al-Asimah from the Ministry of Interior.

From this analysis it will be seen that the hierarchy based on size, administrative and municipal status, reflects the uneven distribution of wealth to support towns in Mesopotamia, both in terms of population and natural resources, as well as the absence of a comprehensive regional and national plan to regulate the overall distribution of population and growth of individual towns.

1. Geoffrey E. Ffrench and Allan G. Hill, Kuwait, Urban and Medical Ecology, Edited by Helmut J. Jusatz, Heidelberg, New York (1971) 2.
2. N. A. al-Jalili, National Development need for Comprehensive Regional Planning in Iraq, Paper presented to U.N. Seminar on Urban Planning, Bucharest (1969) 2. (mimeographed)
3. Directorate General of Civil Affairs, The Official General Censuses of Iraq's population for the years 1957 and 1965.
4. S.S. Shafi, Augmenting Municipal Revenues for Planned Development (with special reference to Baghdad Plan), Baghdad (1970) (mimeographed).
5. Kozo Ueda, Population Projects for Iraq, Report on Revised Projections for Iraq by sex and age group, 1957 - 1980, U.N.D.P., Baghdad (1970)
6. A. H. al-Samarraie, Transportation in Iraq, Ph.D. Thesis submitted to Reading University (1968) 217
7. Polservice, Consulting Engineers, Master Plan of Baghdad, Warsaw, I (1969) ii - 10; the accepted number of the population of Baghdad by Polservice was given as 1,580,000 inhabitants in 1965.
8. Ministry of Planning, Uslub al-Tansig Baina al-Takhtit al-Tarbawi wal Takhtit al-Iqtisadi, (A Report on the Integration of Educational and Economic Planning) Baghdad (1969) 30.
9. Polservice, op. cit. (1969) 11 - 6; Laurence Jones, "World Prospective", Baghdad (1970) 141, Table A3.
10. See al-Jalili Report, op. cit.

11. S.A.L. Umari, Baghdad as described by foreign travellers, translated into Arabic from German, Baghdad (1954).
12. Al-Feel, op. cit. 256; M. J. Mughaniyah, Hukumat al-Shiah Fi al-Tarikh (The Shiah States in History) Najaf (1965) :. 132-133.
13. Al-Feel, 73; Itinerary of al-Munshi al-Baghdadi, 1237/1822, being noted on his voyage with Claudius James Rich, British Resident in Baghdad, in Kurdistan and other sites of Iraq, translated from Persian by A. al-Azzawi, Baghdad (1948) :. 28 - 29. Wa
14. J. B. al-Mahbubah, Al-Najaf, Qudiman/Hadithan (al-Najaf, Past and Present) Najaf, (1958) 41.
15. W. Thesiger, The Marsh Arabs, London (1964) 44.
16. Mahbubah, op. cit., 41.
17. Xavier de plahol, The World of Islam, Le Monde Islamique: Essaide Géographique Religieuse, New York (1959) 74 - 75.
18. Ali al-Wardi, Lamah Tun Tarikiyah Min Tarikh al-Iraq al-Muasir (Social Aspects of Iraq Modern History), vol. 2, Baghdad (1971), :. 257 - 261.
19. Planhol, op. cit. :. 74 - 75.
20. Personal interview with the Head of the Municipality of al-Najaf, (1971).
21. Mahbubah, op. cit. :. 98 and 200 - 204.
22. Reports of the Governorate of the Qadha centre of Mahmudiyah (Personal Interview 1971).
23. Personal interview with the grandson of the founder, K. A. al-Hasani, Ziwiyah, Baghdad (1971).
24. M. S. al-Hasani, Tatawur Umran Baghdad (Baghdad Development), Baghdad (1348/1930), :. 133.
25. Al-Duri, op. cit. 905, *Baghdad, Encyclopedia of Islam*, (1960) 905
26. Judith A. Brown, A Geographical study of Evolution of the Cities of Tehran and Isfahan, Ph. D. Thesis, Durham University (1965) :. 340 - 358, App. 8.
27. Directorate General of Municipal Affairs, The Second Collection of Municipal Laws and Regulations, Baghdad (1965).
A. E. Smailes, The Urban Hierarchy in England and Wales, Geography 29 - 30 (1944) 4i; Brown, op. cit. :. 340 - 358; J. I. Clarke and B. D. Clark, Kermanshah, An Iranian Provincial City, Department of Geog., Durham University, Research Paper Series 10 (1969) 6.
28. A. Smailes, *The Urban Hierarchy in England and Wales, Geography*, 29, 30 (1944-45)
29. F. H. W. Green, Urban Hinterlands in Englands and Wales: Ar Analysis of Bus Services, The Geographical Journal, 115 - 116, 1950, :. 64 - 81.
30. Ian Carruthers, A Classification of Service Centres in England and Wales, Geographical Journal, 123, 1957, :. 371 - 385.
31. Green, op. cit. :. 65, Carruthers, op. cit. :. 376.
32. Brown, op. cit. :. 340 - 358.
33. K. al-Midfai, An Outline of the Development of an Islamic settlement, Najaf - Kufah, Baghdad (1960) :. 1 - 8 (mimeographed).
34. K. al-Midfai, The Administrative Structure of Amanat al-Asimah, Baghdad (1963), p. 7 (mimeographed).

Fig.4.1 The Site of al-Mudawwarah



Chapter 4

Baghdad's Site

The opportunities and limitations of any site are important in the growth of urban settlements. In the course of development, cultural factors play their role in either strengthening or weakening the value of site. Baghdad's site plays an important part in its past and present development. The initial site of Baghdad has been considerably modified during its historical phases, particularly in the past two decades. It is worth remembering that there have been disagreements regarding the exact location of the Round City of Baghdad, which underlies the modern development in the area between Karkh and Kadhimiyah (Fig. 4.1).

The predominance of the single-family type of house and the scatter of high buildings in Baghdad is the result of the present structure of the hydrological and climatic conditions dominating the very flat site of the city.

Geological structure, relief, soil, climate, water resources and floods are the site elements which will be analysed presently. Up to 1956 the city has been developing within the limits set by the areas liable to flood, after which it mushroomed in all directions (Fig. 4.1).

Until the second half of the 19th century Baghdad was supposed to be the only settlement on its site. But Sir Rawlison discovered in 1848, during an unusually dry season, when the Tigris has fallen six feet below the normal low-water mark, that the Western bank of the Tigris was lined with an embankment of solid brickwork dating from the time of Nebuchadnezzar II (605 - 688 B.C.),

Though it has been said that Nahr Isa was a Sassanid origin, no agreement has been reached about that.² Probably the remains of this canal are the same as those of Nahr al-Dawudi (Nahr Isawi) which even now can be traced from the west side of the old airport, terminating near the Secondary School of al-Karkh. Isawi canal is probably one of the distributaries of Saqlawiyah canal. However there is no agreement about the course of the Isa canal and other canals in recent historical writings.* Sarat was another canal branching from Nahr Isa above al-Muhawil,** a town several kilometres south-west of the Round City. Alongside al-Sarat and the other canals, Baghdad grew up during the first years of its establishments.

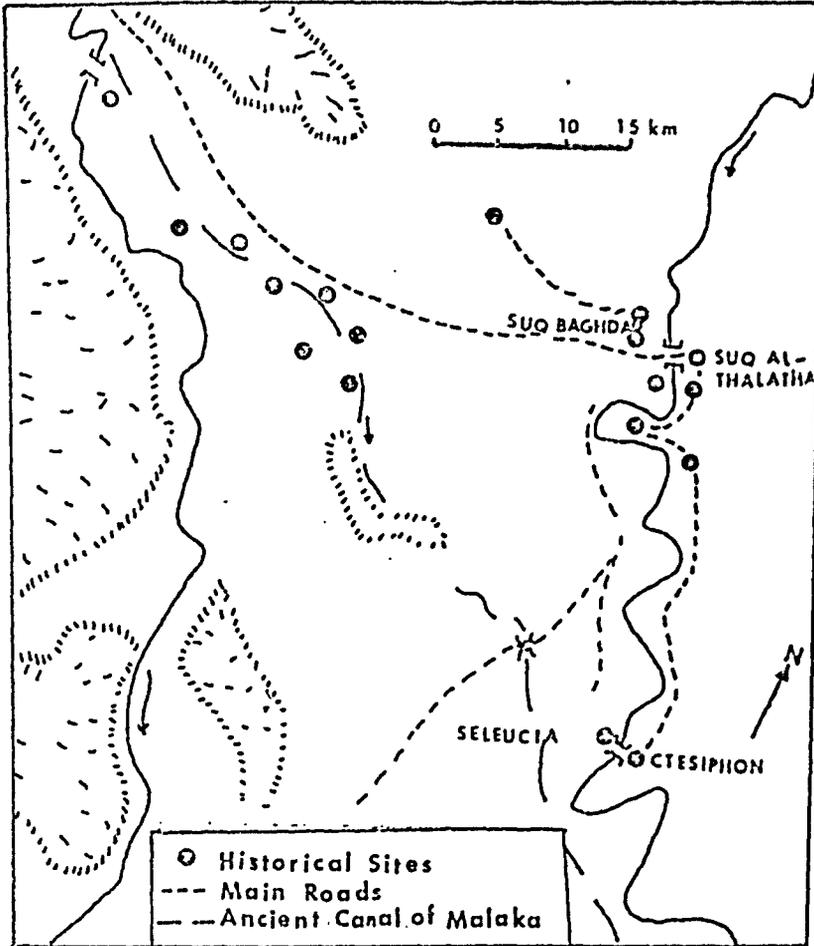
Karkhaya was a subsidiary canal, branching from Isa a mile below al-Muhawil, which again had four distributaries.

* Le Strange was not sure about the Isa canal. He thought only one Isa Canal existed in Western Baghdad. Consequently none of the places in Western Baghdad were located by him in their proper sites. When he wrote his book "Baghdad During the Abbasid Caliphate" in 1900, he was in error about Nahr Isa because he was unaware of the existence of Nahr Isa al-Adham. Moreover, he drew Nahr Isa in a circular course around the Round City of al-Mansur. In other words he considered the Round City as a base to be followed by canals, not taking into account the original irrigation system which existed along time before the foundation of Baghdad. As a result Le Strange had placed the Fardhah (river quay) on the subsidiary of Isa which terminated in the Tigris. This is unacceptable since Nahr Isa, the subsidiary was small compared with the main canal of Isa al-Adham which was spanned by several barrages (qantarahs). The remains of al-Fardhah still exist South of Madinat al-Mansur in Baghdad on the right side of the Baghdad-Hillah highway?

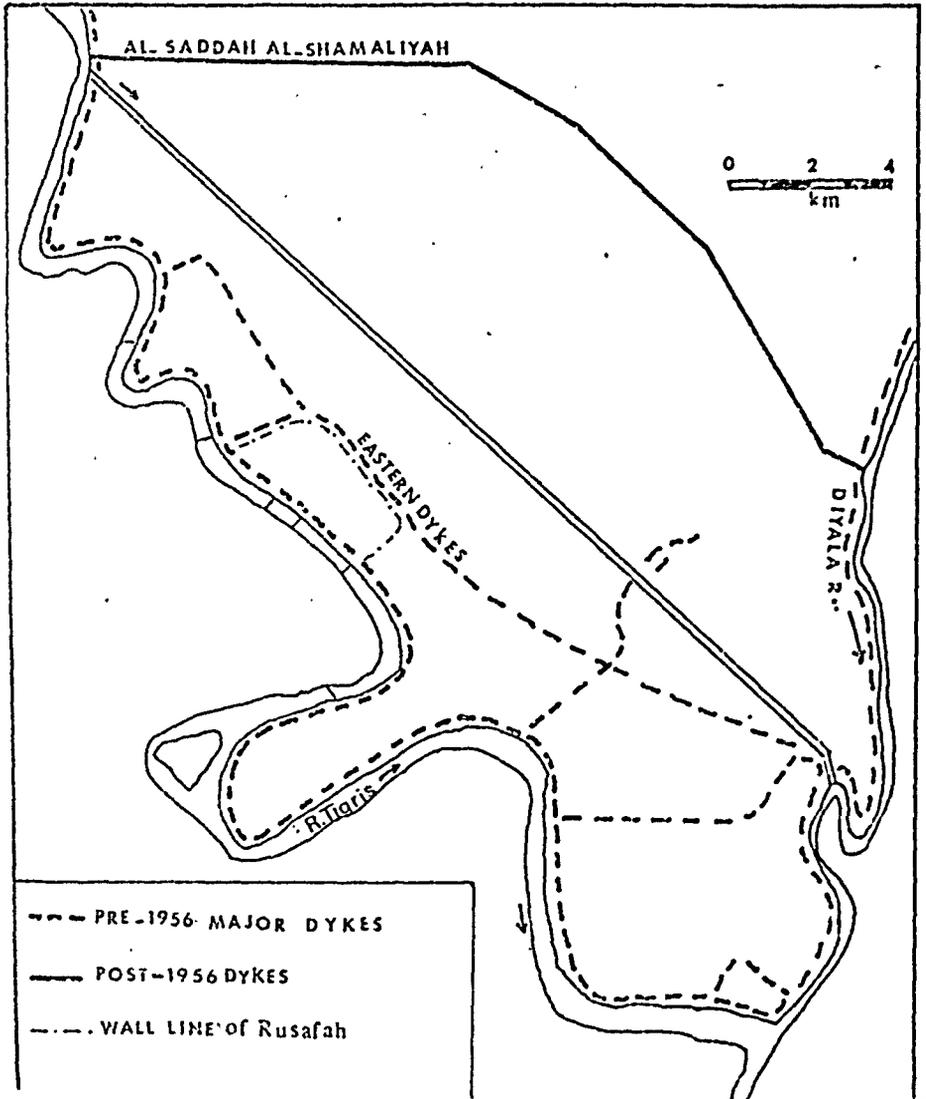
** The word "Muhawil" signifies a place where bales are unloaded: and the town appears to have received this name from the unloading of river barges which took place here, when the cargoes were carried by hand to the small skiffs which plied on the Isa al-Adham canal.

FIG. 4.3

a. SUQ BAGHDAD & CTESIPHON BEFORE BAGHDAD'S FOUNDATION



b. MAJOR DYKES OF BAGHDAD



There were many villages and dayrs(Christian Monasteries) on the West Side of Baghdad. Some of these names can be found in some parts of modern Baghdad, such as Karkh (Fig. 4.2).

Mubarakah, Khatabiyah, Sharfaniyah, Wardaniyah, Katafta, Karkh, Baratha, Sal, Warthala, Barwara and Suq Baghdad were some of the main villages. Karkh was named after a Sassanid village which had been built by Sabur II (309 - 379 B.C.)⁴

Dayr Midian, Dayr Marfthion, and Dayr Omar Salibia, were the main Christian dayrs. Some of these villages were populated by Arabs before the building of Baghdad.

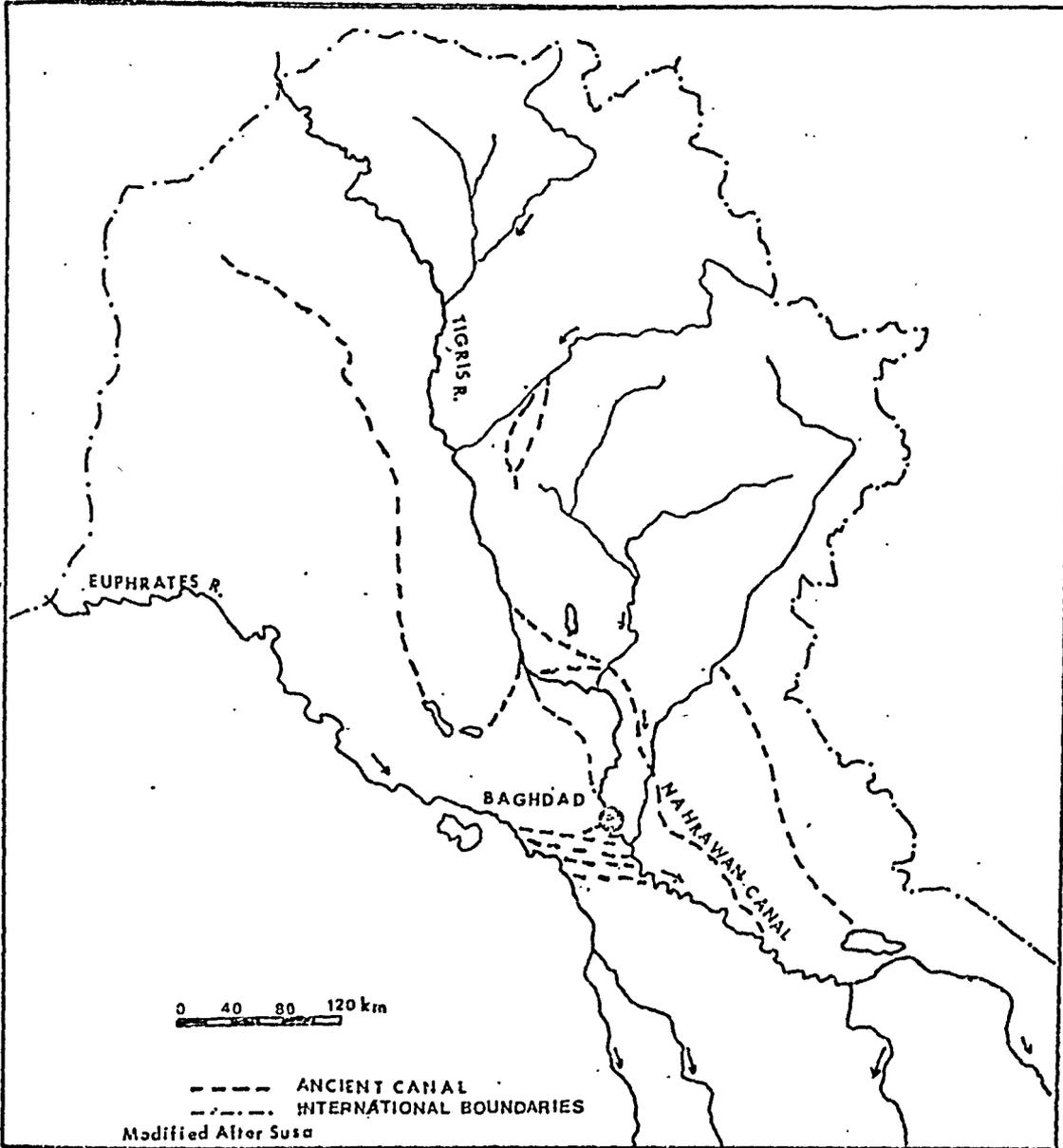
Suq Baghdad was situated south of Al-Sarat, on the road between the villages of Sunaya in the north and Katafta in the south. This village is of historic importance as Baghdad still holds its name. The Round City of al-Mansur probably was built on the site of Wardaniyah village,⁵ Doubtless it was located between the present Juafir and Kadhimiyah in the West of Baghdad.

The Western part of Baghdad was comprised of two Tussugs, Katrabul in the north and Baduria in the south, al-Sarat canal being the dividing line.

There was a good network of roads between the above mentioned villages and between the villages and other urban settlements (Fig4.3a).

On the Eastern part of Baghdad Nahrawan was the chief source of irrigation. It is easy to trace the dry courses of this gigantic irrigation canal from near Samarra town some 120 kms north of Baghdad to around Kut, the provincial capital of Kut Liwa, some 176 kms south of Baghdad. Nahrawan had two main branches from

FIG.4.4 EARLY ABBASID IRRIGATION SYSTEM



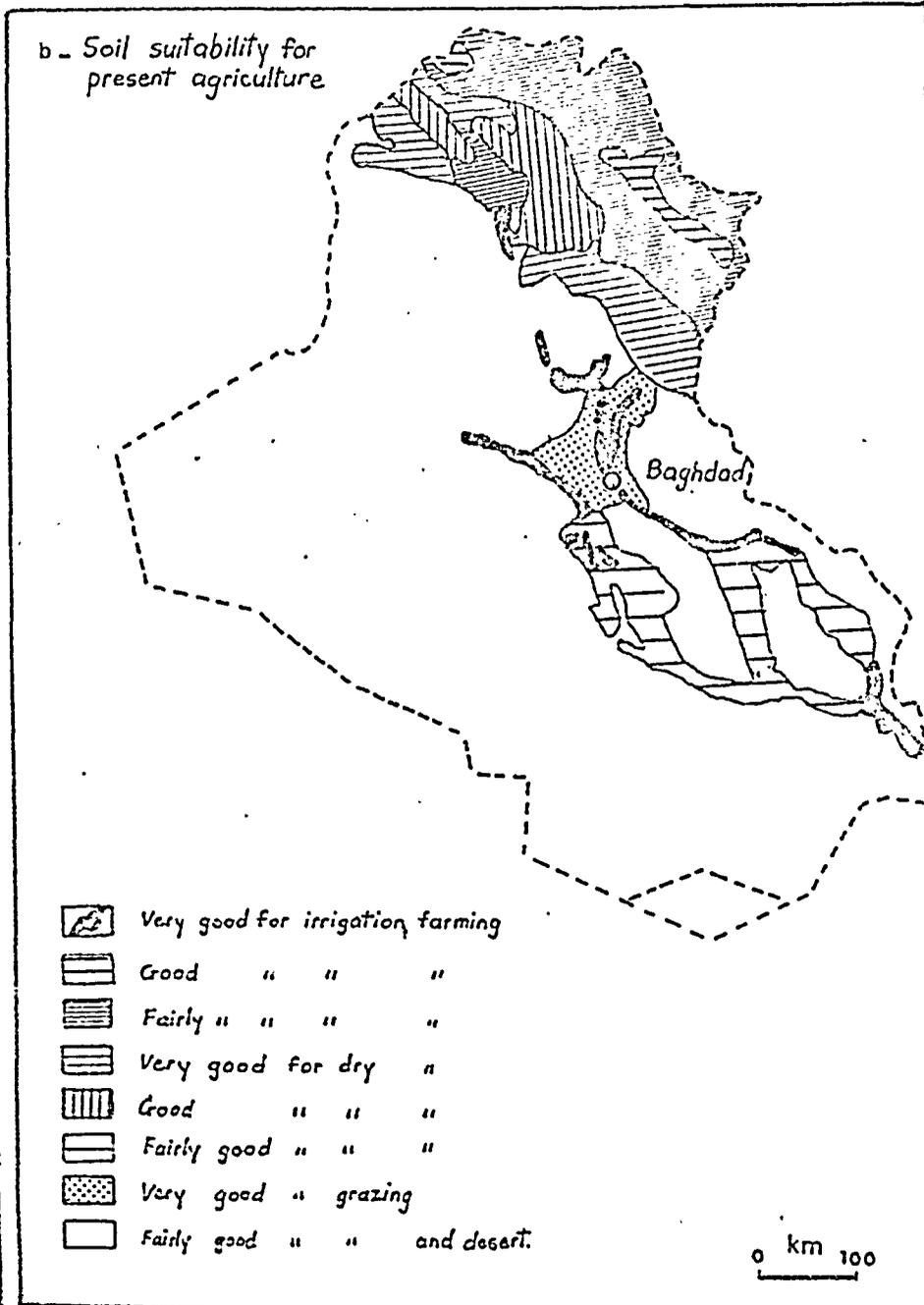
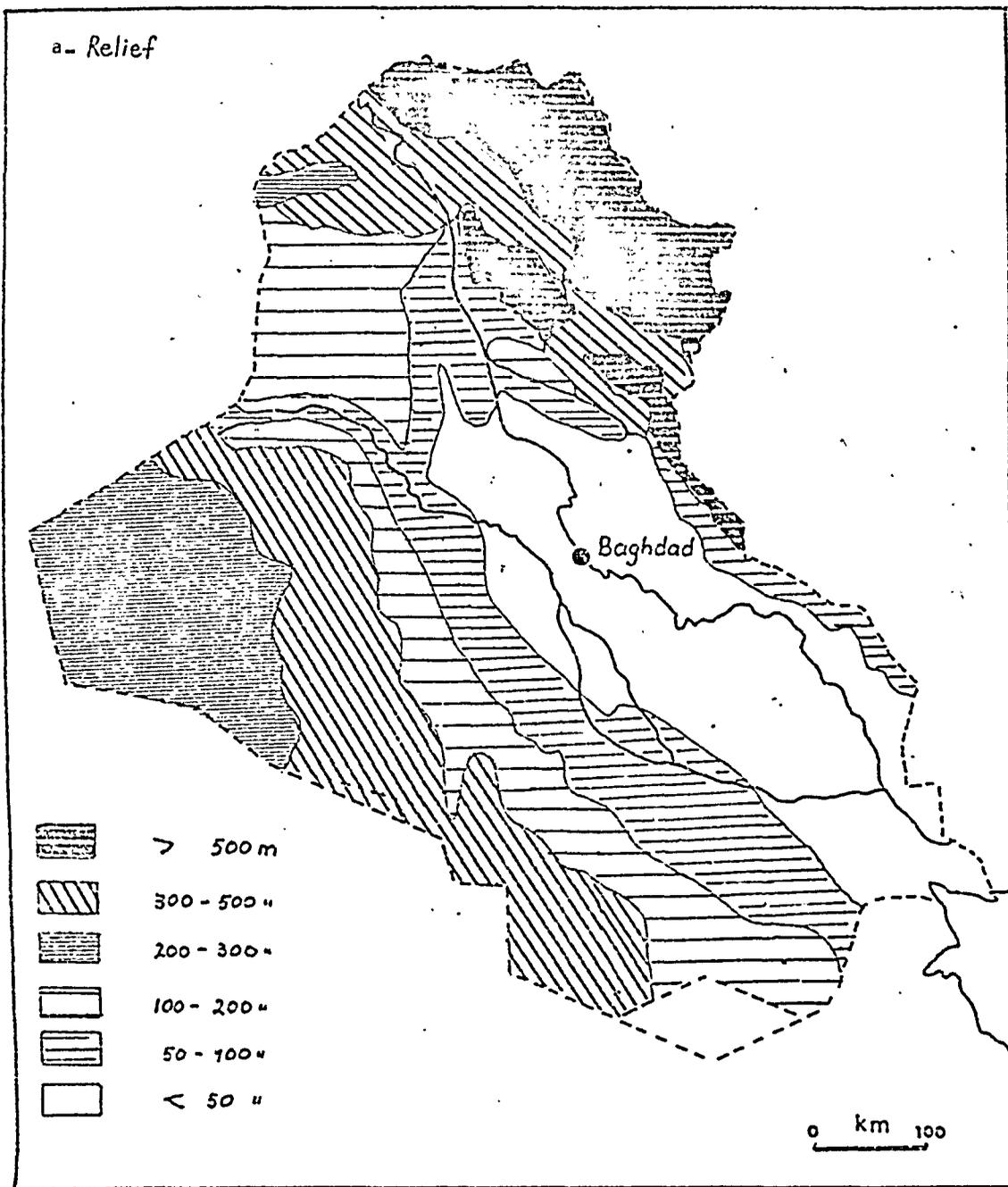
the right bank, penetrating into the heart of the Eastern part of Baghdad, Khalis being the north branch and Nahr Bin the Southern one reaching to near al-Madain (Ctesiphon) south of the present Baghdad (Fig. 4.4). Nahrawan has been considered one of the largest irrigation and artificial canals in the world. It is 120 m wide, 10 m deep and 200 kms long.⁶

Khalis and Bin canals branched into several^a distributaries, irrigating a number of villages and arable land in the Eastern part of Baghdad. Kilwatha was one of these villages. This is probably the present mahallah of Karradah al-Sharqiyah, which has grown to cover the southern Peninsula of the Tigris.

The East of Baghdad was divided into two Tussugs, Tussug Nahr Bug in the north and Tussug Kilwatha and Nahr Bin in the south. There were several dayrs also, including al-Zandaward, a very famous one. The qat'at (endowment) of al-Mukharrim is in Rustaq of al-Afrut. To the south of Rustaq al-Afrut was Suq al-Thalatha (Tuesday Market) so named because a monthly market used to be held on the spot on a Tuesday. Dayr Dirmalis was one of several dayrs in this part.

As the Christian monasteries were optimally situated, the Caliphs built their palaces on or near these sites. Moreover, the Round City itself was surrounded by several of these dayrs. Excavation done in Tel Harmal in 1949 south-east of al-Rusafah (Eastern side) has revealed the existence of an urban settlement, dating back to about 1792 B.C. By 1950 more excavations were carried out, revealing Babylonian tablets belonging to the period of Hammurabi, on the site of the present mahallah of Tel Muhammad

Fig.4.5 Relief and Soil of Iraq



F.N. 9

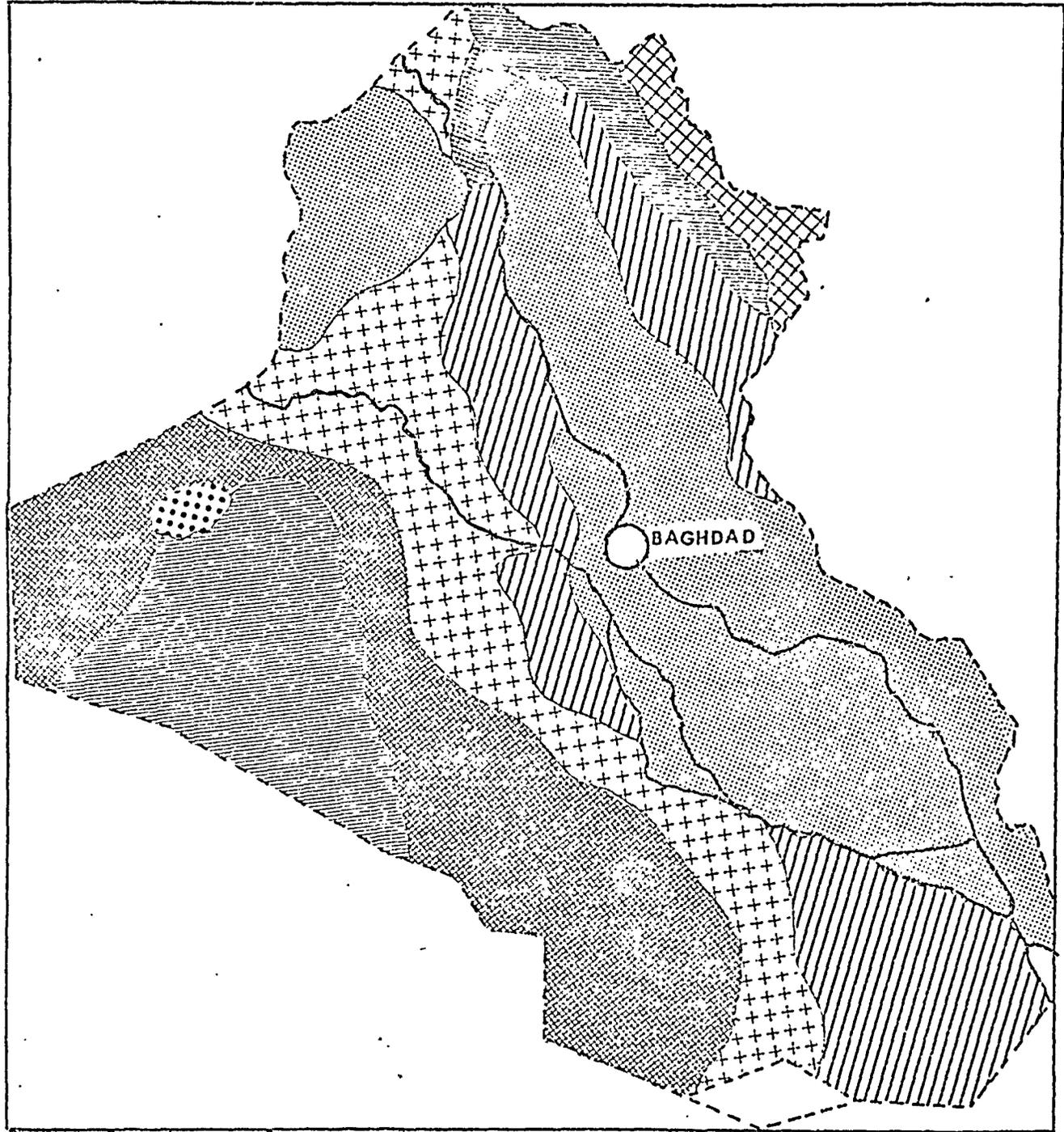
in south-eastern Baghdad. It is now occupied by low-class dwellings. Many tells are in need of excavation. There are probably other relics of urban settlements illustrating the geographical importance of this site. The majority of the above-mentioned canals, however, have ^Sdisappeared. They were running under different parts of the built-up area of Baghdad - but it is not too difficult to examine the courses of many of them in both Karkh and Rusafah on the periphery of the outer fringe area.

A peculiar phenomenon can be noticed here. Baghdad on both sides of the river was deriving water mostly from either the Euphrates canals, or from the Tigris indirectly by several distributaries which branched from the chief canals of the Tigris itself. Nor is it ~~entirely~~ dependent on the Tigris supply.

Geological structure, relief and soil of the Baghdad area:

Baghdad is situated in the plain of Mesopotamia or al-Rafidain. This plain has a general N.W. to S.E. slope, falling gently at an average ratio of about 6 cm per ⁰kilometer. It is bounded by the Persian mountains in the east and the stable Arabian plateau in the west and south-west (Fig. 4.5a) The maximum width of the plain is 350 Kms and its length is 650 kilometres. Since early pre-historic times the shoreline of the Arabian Gulf, originally stretching at least to the vicinity of Samarra and Hit, has *been* steadily receding in a south-east direction. The Mesopotamian Plain covers about a fifth of Iraq's area; it is 93,000 sq. Kms. According to Mitchell it is 115,000 sq. kms[?] This plain is similar to that of ancient Babylonia but longer. The general

FIG.4.6 GENERAL GEOLOGICAL MAP OF IRAQ



	Period	Age	Formation	Processes
	Quaternary	Holocene Pleistocene		Some erosion in the mountains. Erosion in mountain terraces in valleys. <i>River and wind and wind blown sediments in LM Plain. Terraces and fans in upper parts of LM Plain</i>
	Tertiary	Pliocene Upper Miocene	Pukhtari Upper Fars	Erosion in mountains sedimentation in the foothills area Sedimentation of gravel and conglomerates with silt and mudstone in LM Plain.
		Miocene	Lower Fars Euphrates Limestone	Sedimentation in inland seas and in the shelf of gypsum salt mudstone and marine limestone.
		Oligocene		Sedimentation in the shelf mainly limestone. Rocks in the northern part of Iraq.
		Eocene		Sedimentation in the shelf mainly limestone.
	Cretaceous			Sedimentation in the shelf mainly limestone.
	Jurassic Triassic Permian			Sedimentation in the shelf mainly limestone Sedimentation mainly limestone Sedimentation mainly limestone.

geology of the country is shown in (Fig. 4.6). The Mesopotamian geosyncline consists of older sediments as well as those of a more recent age. This synclinal depression contains three types of deposit. The first of these, alluvial deposits of recent age, consists of river and flood deposits, i.e. loam, silt and sand.

Table 4.1: The Mechanical Composition of Soils in Baghdad Site:

Depth in m.	Sand per cent	Silt per cent	Clay per cent
0 - 60	16.3	50.6	33.1

Source: J. P. Delver Saline Soils in Lower Mesopotamian Plain, Ministry of Agriculture, Technical Bulletin, No. 7 Baghdad (1963) 3.

The second of these, Quaternary sediments, consists of mainly fluvial deposits, i.e. sandstones, siltstones and non-marine shales (Bukhtiari Formation). The last of these late Tertiary deposits, consists of sandstones, shales and evaporites, ranging in age from early Tertiary to Cambrian.

Table 4.2: A General Picture of the Stratigraphy of Baghdad's Site.

Ago	Formation	Lithology (Process)	Thickness	Occurrence	Ground water Characteristics
Recent	Younger alluvium	Gravels, sand, silt, clay, some secondary Gypsum, Sand-dunes	Unknown, Probably Exceeding 100 ft.	Wadis, sand dunes area	Some shallow wells near the Tigris and Euphrates have satisfactory ground water for use.
Pleistocene	Old Alluvium	Deltaic, Lacustrine, and aeolian deposits, silt, sand. Erosion and deposition in some places	Unknown Probably Exceeding 100 ft.	Terraces Upper part of lower Mesopotamian	Older Alluvium contains ground water but unsatisfactory for human use.

Source: G. M. Ahmed, Baghdad - Aspects of Site, Bulletin of the College of Arts and Science, Baghdad (1960) 21.

The regional dip of the old formation, i.e. pre-recent sediments in general have two main directions. The first one is a south-easterly direction of about 20° while the second one is north-easterly, of about 1°.

The sediments of the Baghdad area are of recent and pleistocene age. The Tigris, Diyala and the Euphrates river contributed the bulk of these sediments. The sediments deposited annually in the flood plain of Baghdad have been estimated by Mitchell to be 10 million tons, while Husted gave a figure of 2.2 million cubic yards.⁸

The maximum and minimum monthly weight of sediment in the Tigris water at Baghdad are 2,300 and 170 gms/cubic m. of water respectively. The annual average weight of the Tigris sediments at Baghdad is 795 gms/cubic m. Generally the Tigris carries the greatest quantity of alluvial sedimentation in April. According to Majid, the Tigris carried in April 1954, 35 million tons of sediment. Al-Khuli has stated that the Tigris sedimentation amounts to 150 parts/million and 20,000 parts/million in low and flood seasons respectively.⁹

Generally the fertile soil of the Mesopotamian plain of early history is now buried several metres below the present land surface (Fig. 4.5b). The annual average increase in depth of the plain by al-Rafidain sedimentation is one millimetre.

According to al-Khuli, the depth of this alluvial stoneless plain is several hundreds of metres, being only 100 - 150 metres according to al-Khalaf, while the flood plain deposits, as Ahmed stated, were found to be 66 feet in thickness in the Baghdad area.¹⁰

Potentially the soil of this plain is fertile, but it requires effective irrigation systems to compensate for the shortcomings of climate.

Salt accumulation on the soil of both the middle and Southern Iraqi plain is the main danger. The annual average of soluble salts in the Tigris at Baghdad is 260 milligrams per litre of water.¹¹ More than half of al-Rafidain plain is in a saline condition owing to the desert climate, the absence of any effective irrigation system, continuous floodings and variation of water levels produced by irrigation resulting in concentration of soil salts in

in the root zones of the crops, thus reducing land productivity.¹²

Unlike most of the plain Baghdad has many site advantages, owing to the efficiency of natural drainage, since it has a levee type of soil. It is composed of alternative strata of clay, silt, clay and loam, which are homogeneously mixed with top-soil. The average depth of the levee stratum is between 4 - 8 ms. and lies over a permeable clay-layer; the thickness diminishes in the direction of the adjacent basins. The level soils of the Tigris appear at a depth of 1.2 - 2.0 m under the overlying irrigation soils. The levee soils of Baghdad are marked by gentle slopes inclined about 1° from the river in the direction of the adjacent basin soils in zones 4 - 5 Kms. wide on both banks. The levee soils of Baghdad's site are 2 - 3 m higher than the alluvial basins, which lie further inland. Therefore, the levee soils have a satisfactory drainage both to the river and to the basins. Generally speaking, they have a deep ground-water table though it fluctuates owing to seasonal variations in the level of the Tigris. The soils are almost non-saline and have a relatively coarse texture. They are permeable, facilitating easy percolation to replenish ground water supplies. The morphological depression between the river levels of al-Rafidain is filled with the basin deposits of these two rivers. The average depth of each layer is between 3 and 4 m. They are mainly silt, clay, silty-clay and clayey-silt sediments. Meander soils are the youngest river deposits accumulating on the inside bends being mostly sandy with silt sometimes loosely structured.

Levee soils are considered as of first-class quality and are

FIG. 4.8 BAGHDAD'S SOILS AND MAJOR DYKES

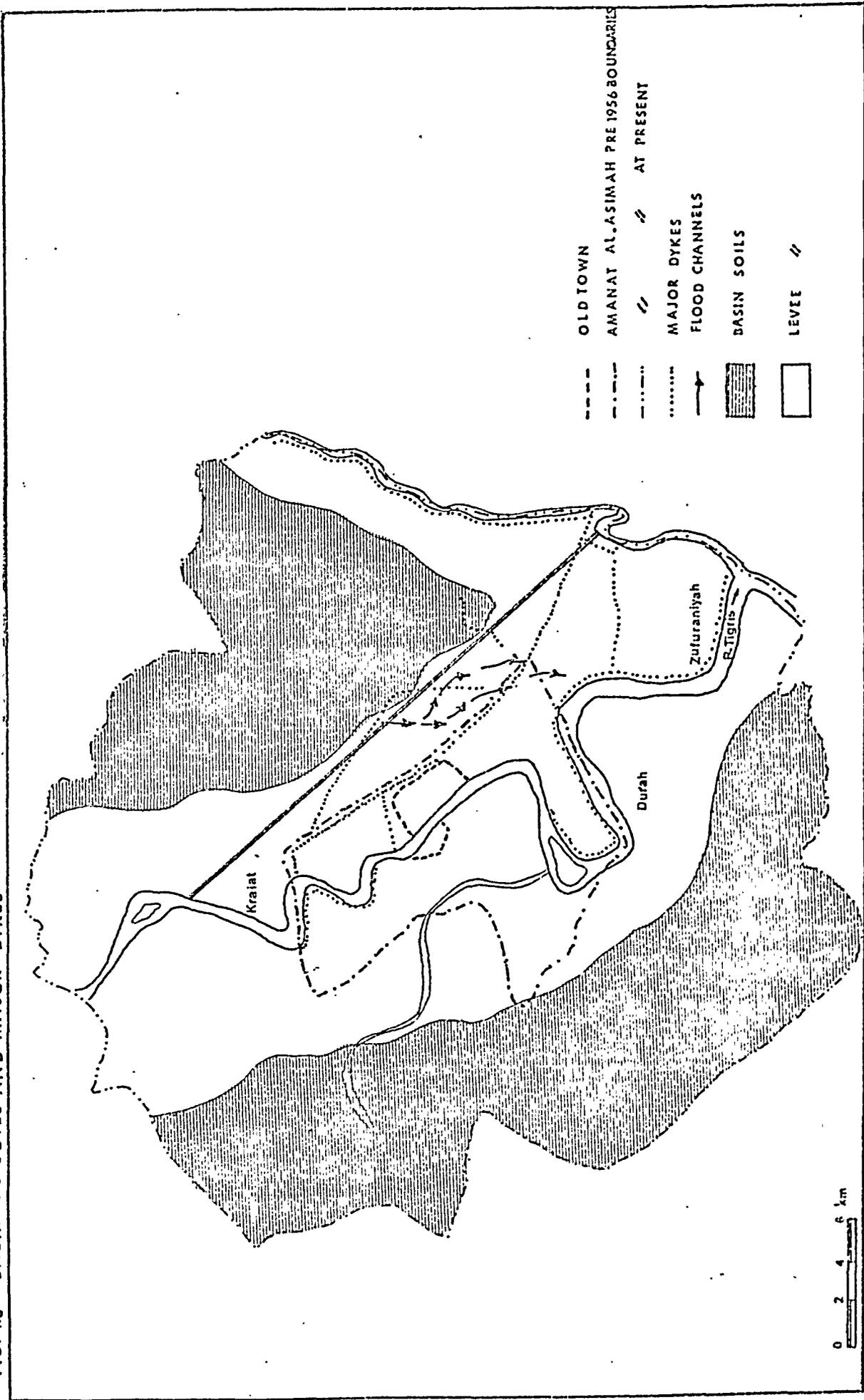
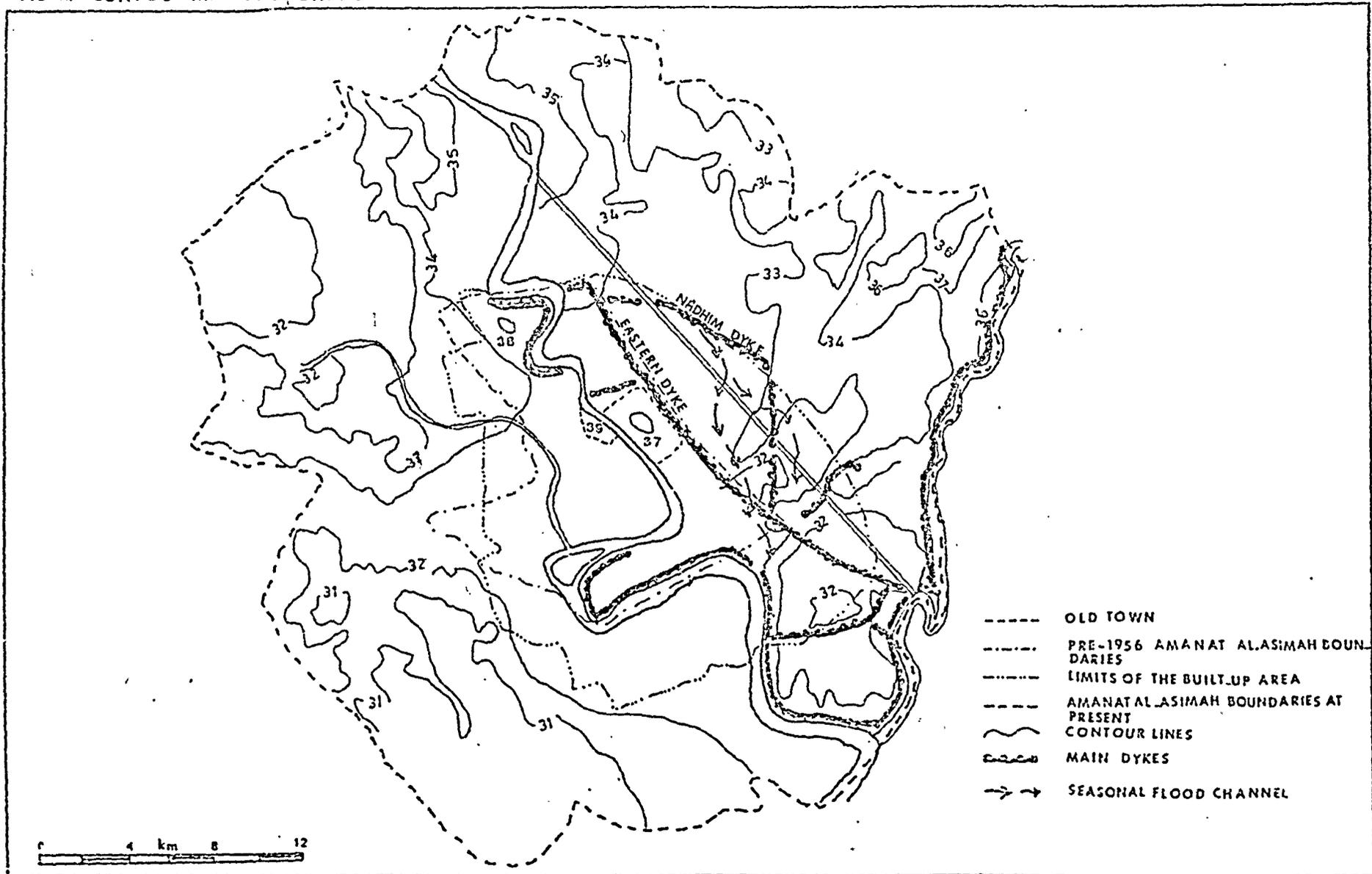


FIG.4.7 CONTOUR MAP OF BAGHDAD



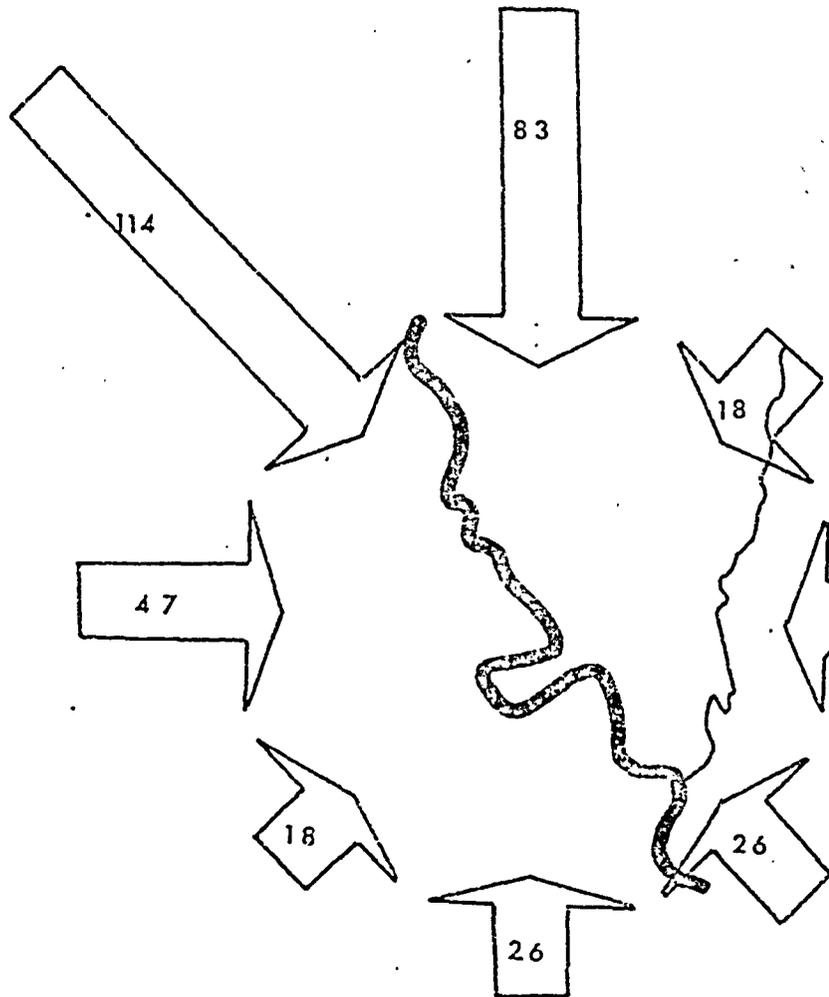
mainly used for the cultivation of perishable agricultural produce. River basin soils and flood soils are considered to be of secondary quality. They are not fully cultivated. At present only barley and wheat in a fallow system are cultivated, although vegetables and some fruit trees can be found.

Generally the gradient of al-Rafidain plain is very low, being on the average Ca 6 cm/Km, towards the Arabian Gulf. This low gradient is reflected in the low gradient of the Tigris river, 6.9 cm/Km and that of the Euphrates, 10.5 Cm/Km. According to Mitchell, the gradient of the Tigris in the southern part of the Baghdad area is about 1:15,000.

The relief of the Baghdad area is so flat that in some parts of the city even shallow depressions are filled in with water. Most of them are affected by the frequent depositions of al-Rafidain floods. The highest point within the Amanat al-Asimah boundaries is in the old part of al-Karkh opposite to al-Sarai. Its height is between 36 - 39 m (Figs. 4.7, 4.8). Here levees are relatively higher than in the surrounding areas. They act as natural dams, protecting Baghdad from floods. The lowest point is in the left bank between Rustumiyah and Zufuraniyah; it is between 31 - 32 m above M.S.L. . . A height of 30 m above M.S.L. is reached south-east of the new airport in al-Karkh. There are some points in Rusafah of a height of more than 36 m above M.S.L. Shurjaah, the business centre, occupies ground 36 - 38 m above M.S.L. Al - Kadhimiyah has developed on another high level, ranging between 35 - 37 m above M.S.L. The height however, decreases in all directions from the city centre.

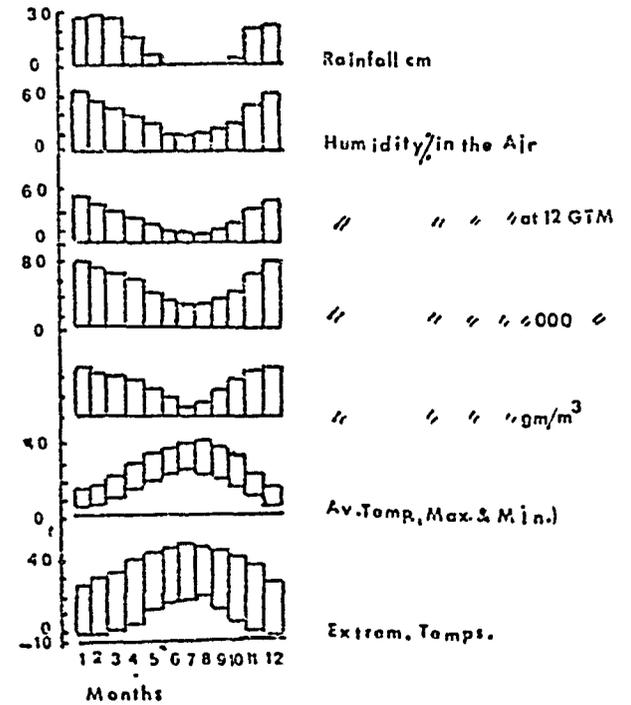
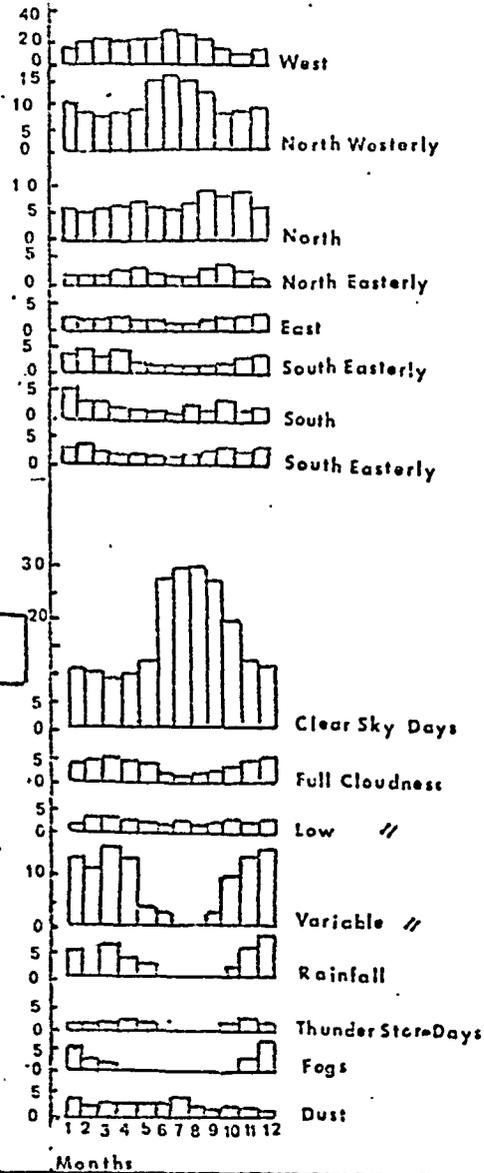
Fig.4.9 Climatic Conditions in Baghdad

Wind Frequency (Days)



MONTHLY AVERAGES OF METEOROLOGICAL ELEMENTS

Winds



Thus Karkh, Kadhimiyah and Rusafah, especially the city centre, have been inhabited from earliest times because their high-lying area provided safety during floods in the otherwise very flat site of Baghdad. It is a peculiar urban phenomenon that until recently, various functions were competing to occupy sites as close to the river as possible, where flooding is least hazardous. The close approach of the Tigris and Euphrates rivers in the latitude of Baghdad is believed to be a result of tectonic sagging in this region. The N.S. trend of al-Rafidain in this central sector, coupled with the similar tendency of the Adhaim and Diyala rivers is strongly suggestive of structural rather than erosional forces.¹³

Up to 1956, the date of the beginning of effective flood control, al-Rafidain were the chief physical factors affecting the planning and growth of Baghdad by means of their slow sedimentation, changes of course and sudden frequent floods.

Climate: (Fig. 4.9)

The urban form of a town, in the absence of modern technology, reflects the climate of the area to a large extent. Apart from the immediate riverine sites in the region of Baghdad, where micro-climatic influences of the Tigris are found, the rest is typical desert climate. The Baghdadis have responded to their desert area by building up characteristic forms, both public and private, which function successfully in this environment. The lack of rainfall, the extremes of temperature diurnal and annual, the prevailing winds, the dust from the surrounding vast desert have all been considered when traditional Baghdad was built. The compact cellular morphology of Baghdad was perhaps more a result of intuition

than design, reflecting a concordant climatic approach.

Together with the climatic factors the social structure and Arab traditions have been instrumental in creating a unique style in houses, bazaars, and roads. It is not difficult to recognize the influences of climate reflected in both public and private buildings that have survived in Baghdad from earlier periods. During its historical development up to the First World War, Baghdad has been trying to provide shade as a protection from the heat of the sun, in its zuqazq system and bazaars.

To give a single example, as a morphological element in the current study especially for old Baghdad, the traditional Baghdad or Arab courtyard house has been influenced to a large extent by climatic factors (See Part IV Chapter 6).

Directly or indirectly Baghdad's climate, like that of the rest of Iraq, is influenced by several factors. The Mediterranean sea affects the climate of Baghdad by frequent cyclonic storms, particularly during winter, owing to the funnel shape of al-Rafidain plain and the absence of topographical barriers. Relative^{ly}, the Arabian Gulf supplies hot humid air masses during summer, moving northward as far as Baghdad (Figs. 4.9, 4.14c). The topographical setting of the country, particularly the desert in the west and the mountains in the north, the latitudinal location and to a very limited extent the natural vegetation, are also influencing Baghdad's climate. It may be concluded from this that Baghdad has a distinctive climate. It is semi-arid with sub-tropical temperatures. According to Koeppen's classification Baghdad has a 'Bshw' climate (Steppe climate with 250 - 500 mms of annual rainfall.)

Mean annual temperature is greater than 18°C with dry periods in summer.¹⁴

The main distinguishing climatic characteristics of Baghdad are its extremes. Hot dry summers and mild to cold winters, with temperatures rising above 36°C on almost every day in the long summer. This has dictated certain patterns and forms which influenced the physiognomy of the city. The nights are comparatively cool; 25°C is the mean daily minimum in July. Temperatures below freezing point are rarely experienced in winter, which is almost a mild season. The lowest minimum temperature recorded during the last 54 years has been -8.5°C on 20th January 1964, while the highest maximum temperature was 50.2°C on 5th August 1957.¹⁵ The duration of the winter season is more than three months and lasts from the end of December to the end of February while summer extends over more than four months, from the end of April to the end of August. Baghdad has a high annual range of temperature. The average daily sunshine in July is 14 hours and 4 mins, 3 hours and 48 mins greater than that of January, which is 10 hours and 16 mins.¹⁶ In Baghdad 75 per cent of daytime hours have sunshine, but the health of the inhabitants are preserved by the dryness of the air and the refreshing coolness of the nights, compared with Basrah's humid weather. Another climatic feature in Baghdad is the great range of diurnal temperatures owing to the low relative humidity as shown in the following table:

Table 4.3: Daily range of temperature at Baghdad

	Mean daily maximum °C	Mean daily Minimum °C	Mean Daily Temperature Range
January	15	3	11
July	43	25	16

Spring and Autumn are temperate short transition seasons. They last less than two months each. Spring lasts from the end of April to the end of March, whereas Autumn last from the end of September to the end of November.

Baghdad in its central situation on al-Rafidain lowlands, has a relatively low pressure system in winter. This links the Mediterranean and Arabian Gulf low pressure¹³ areas and acts as a passageway for Mediterranean depressions. As a result of the high pressure concentrated on the Zagros Mountains, it is only natural that Baghdad experiences both warm and cold periods in winter. It has relatively low pressure during the summer months.

The main prevailing winds in Baghdad are north-westerly, northerly, easterly, north-easterly and south-easterly. The north-westerly winds develop on the Anatolian and Armonian Plateaux. They have Fohn characteristics and are dominant throughout the year, particularly in summer when they account for 75 per cent of the winds. This dominant direction is owing to the absence of Mediterranean depressions, the low pressure over the Mesopotamian trough and Arabian Gulf and the orientation of the Iraqi mountains, which is from north-west to south-west. The north wind (shamal) blows on nine out of every ten days during June, July and August. The northerly wind blows particularly during winter, spring and autumn, towards the Arabian Gulf. The north-western and northern winds, giving an almost uninterrupted air draught, have to be considered favourable factors since they are useful in bringing down the high maximum temperature and in slightly raising the air humidity.

The easterly and north-easterly (Sharji) winds are cold and damp in winter, while the south-easterly winds diminish as they reach Baghdad in summer. They are dust laden and have a high relative humidity, since they come from the Arabian Gulf with cyclonic fronts. Summer winds are hot and dry, while winter winds are cold and dry, except during the cyclonic disturbances when they become humid and mild. Owing to the dominant north and north-westerly winds, the industrial plants, particularly those susceptible to climatic factors, should be located southwards as far as is possible.

Dust storms coming from silty desert areas are a common feature of the Mesopotamian climate. They are caused by strong winds and also whirlwinds which arise when dry rainless fronts are passing. Usually dust storms are expected to occur during the hot dry period, from April to November, though occasionally they occur in winter with the cold fronts. In Spring and Autumn they are associated with both advancing and retreating depressions of the Mediterranean. Only a few summer dust storms affect visibility. Baghdad airport closes owing to these dust storms for 1 - 3 days per annum.

Rain is the dominant form of precipitation. Baghdad like most parts of the country has an extremely dry summer, owing to the shift of Mediterranean depressions to the north and stability of the C.T. dry and warm air. The city has an insufficient quantity of rainfall, the annual mean being 150.8 mms. Hence irrigation in the Baghdad area is vital. January and February are the main rainy months, although Spring and Autumn experience some occasional rainfall. Rainfall distribution

varies considerably in amount from year to year. For instance Baghdad which has a mean annual rainfall of 150 mms received only 50 mms in 1901, while it had 566.8 and 255.9 mms. in 1894 and 1963 respectively. The heaviest downpour recorded at Baghdad was 71 mms on the 18th August 1968.¹⁸ Baghdad has a high mean deviation of rainfall as shown below.²⁹

No. of years	Mean deviation		Mean annual rainfall	
	mms	inchs	mms	inchs
49	72.4	2.9	159	6.3

Variability = $\frac{\text{Mean deviation}}{\text{Mean annual rainfall}} \times 100 = 45.03\%$

The rainfall is indeed insignificant and unless water is brought in from outside, life in Baghdad is impossible for both human and plant life. There is also a monthly deviation in rainfall e.g. January rainfall at Baghdad was 13.8, 54.1 and 7.5 mms respectively in 1954, 1955 and 1966. Baghdad's rainfall is generally associated with thunder showers and is of a short duration owing to air masses passing from the Mediterranean towards the south-east rather than to the instability of local air masses. On average thunder occurs in Baghdad on 9.9 days per annum.²⁰ Although Baghdad's mean relative humidity is 38 per cent it has both monthly and annual variation. However, relative humidity in summer is lower than that of winter. Fog is a very rare phenomenon in the climate of Baghdad. 1966 for instance had only six days with fog. There is a lack of evaporation measurement in Baghdad and the whole country.

There is virtually no snow or hail in Baghdad. It has only 0.2 and 0.7 days of snow and hail per year respectively.²¹

The non-existence of central heating systems in the planning of Baghdad houses is explained by the rarity of cold weather.

Water Resources: (Fig. 2.8)

Rivers are almost the sole water resources for the Baghdad area. Rainfall, as has already been discussed, is unreliable. The same can be said of ground water. Like most of Iraq Baghdad's site is prevented from being a desert by al-Rafidain.

Modern Baghdad has developed alongside the Tigris from Kraiat and Kadhimiyah in the north to Zufuraniyah and al-Durak in the south. (Fig. 4.8). Its riverine length is about 56 Kms. In both Karkh and Rusafah, one can see the dominant morphological pattern of many urban land uses running along an axis parallel to the Tigris.

Studying the original network of rivers of the Round City of Baghdad is of vital importance, since it will bring necessary information for the interpretation of its morphological development. Baghdad's site has been considerably modified as a result of the changes in the river course and irrigation systems, together with the frequent overflow of the river. Therefore one has to consider the original and the present river network in any town-
scape study of the city (Fig. 4.2).

The Tigris at present is the main source of water for both domestic use and irrigation. The average salt content of the Tigris water is 1200 parts per million.

Table 4.4 Salt contents of the Tigris and Diyala

	Total soluble salt	CaCO ₃	CaSO ₄	MgSO ₄	MgCl ₂	NaCl ₂	NaZSO ₄
Tigris	550	156	63	53	53	29	-
Diyala	1,000	230	176	24	91	153	-

FIG. 4.11

HYDROGRAPH OF RIVER TIGRIS AT BAGHDAD (SARAI)

YEARS 1953-1954 ----- 1965-1966 1968-1969 - - -
1960-1961 - - - - - 1966-1967 ----- 1969-1970 - - -
1962-1963 1967-1968 - - -

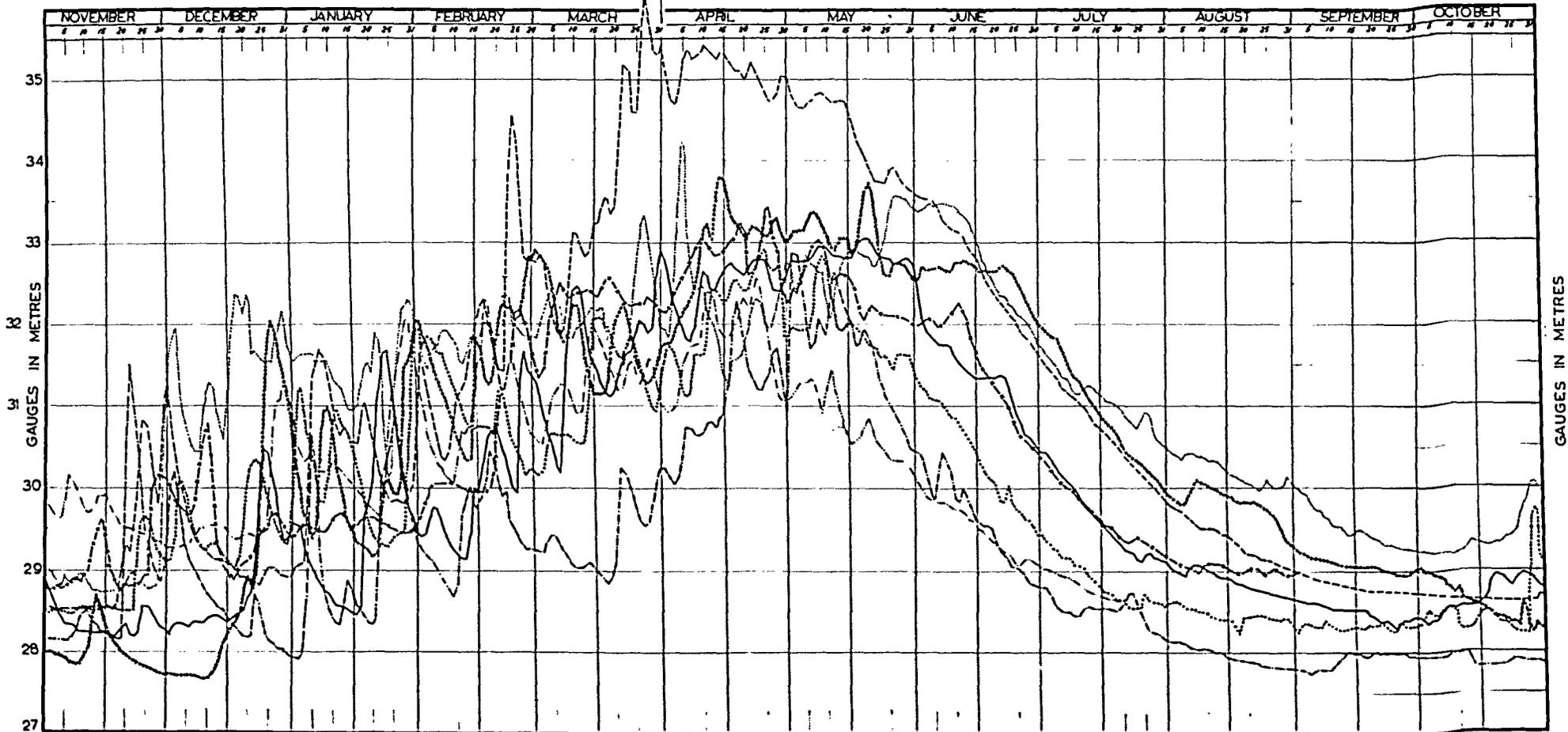
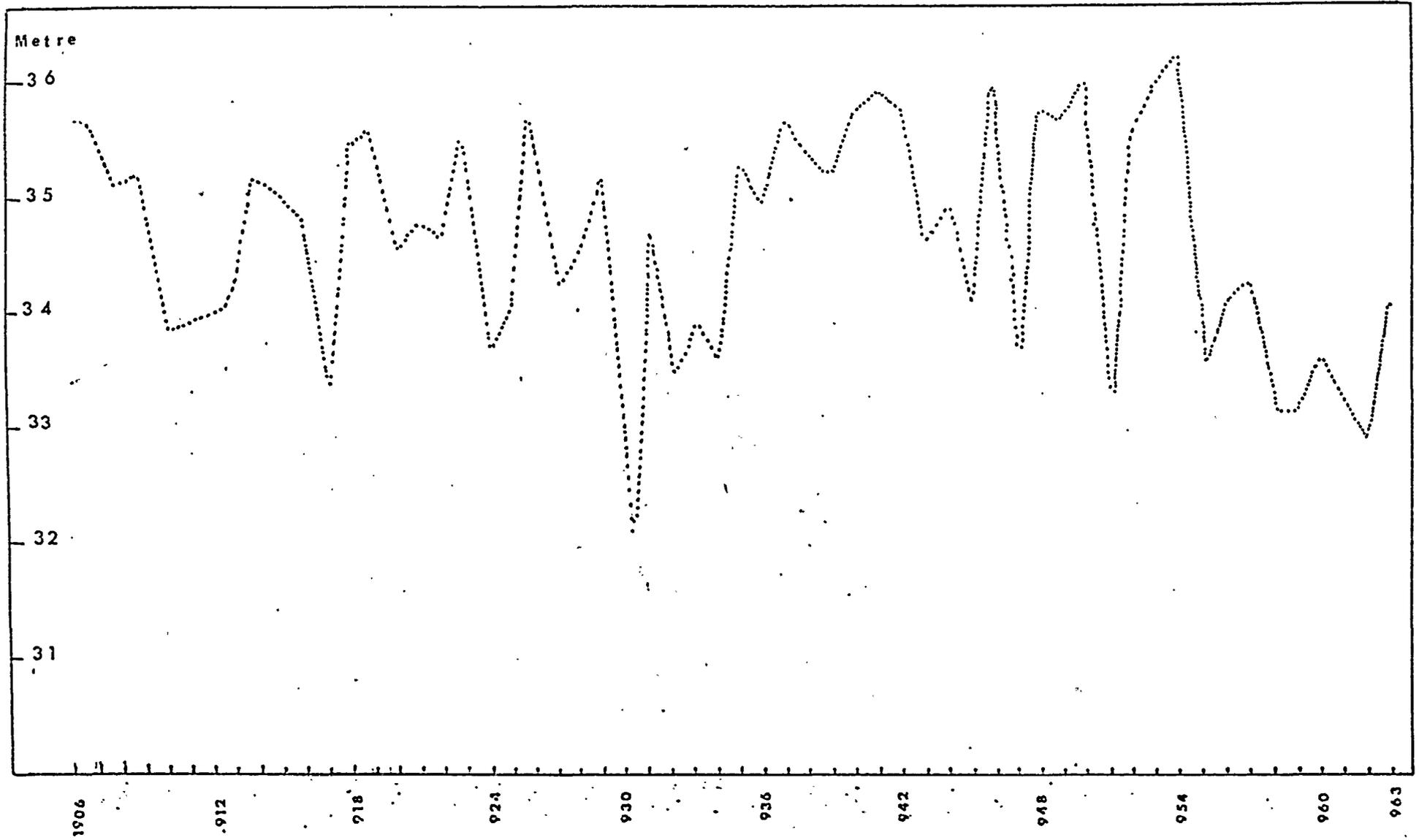


Fig. 4.10 The Flow of the Tigris, 1906-1963.



F. 2112

It usually contains low nitrate concentrations which are not more than 25 parts per million, but boron concentrations are less than 0.5 parts per million.²² Salts deposition and floods are considered here as negative aspects of the river.

As expected from the current study one will be able to see how far Baghdad's growth and plans have been influenced by river. The historic urban nuclei of Baghdad, i.e. Kadhimiyah, Adhamiyah and Karralah al-Sharqiyah have been developed originally on the river's meandering loops.

Under natural conditions al-Rafidain floods usually take place in spring, they deposit new soil layers, increasing salts in the soil as a result of the insufficient and inadequate drainage systems. Floods raise the water table, and this in turn limits the loss by evapo-transpiration and frequently produces insanitary conditions in the most densely populated parts of the city. The daily average drainage of the Tigris on Baghdad's site has been variously estimated between 1,220 to 1,544 cumecs.²³

This variation in the figures is owing to the fact that the drainage is well defined only for periods of low flows. During some floods breaches have occurred in the dykes of the Tigris river upstream from Baghdad, causing flow to by-pass the gauge. The river Tigris has been gauged since 1906 (Figs. 4.10, 4.11)

The maximum discharge of the Tigris also variously estimated between 10,200 to 11,600 cumecs.²⁴ There has been a large variation in the average flow; the flow in 1930 was only 499 cumecs, as against 1,390 cumecs in 1953. The dates of the annual maximum and minimum flows are very unpredictable. In 1914 the annual maximum was recorded on the 3rd December, a date on which the water

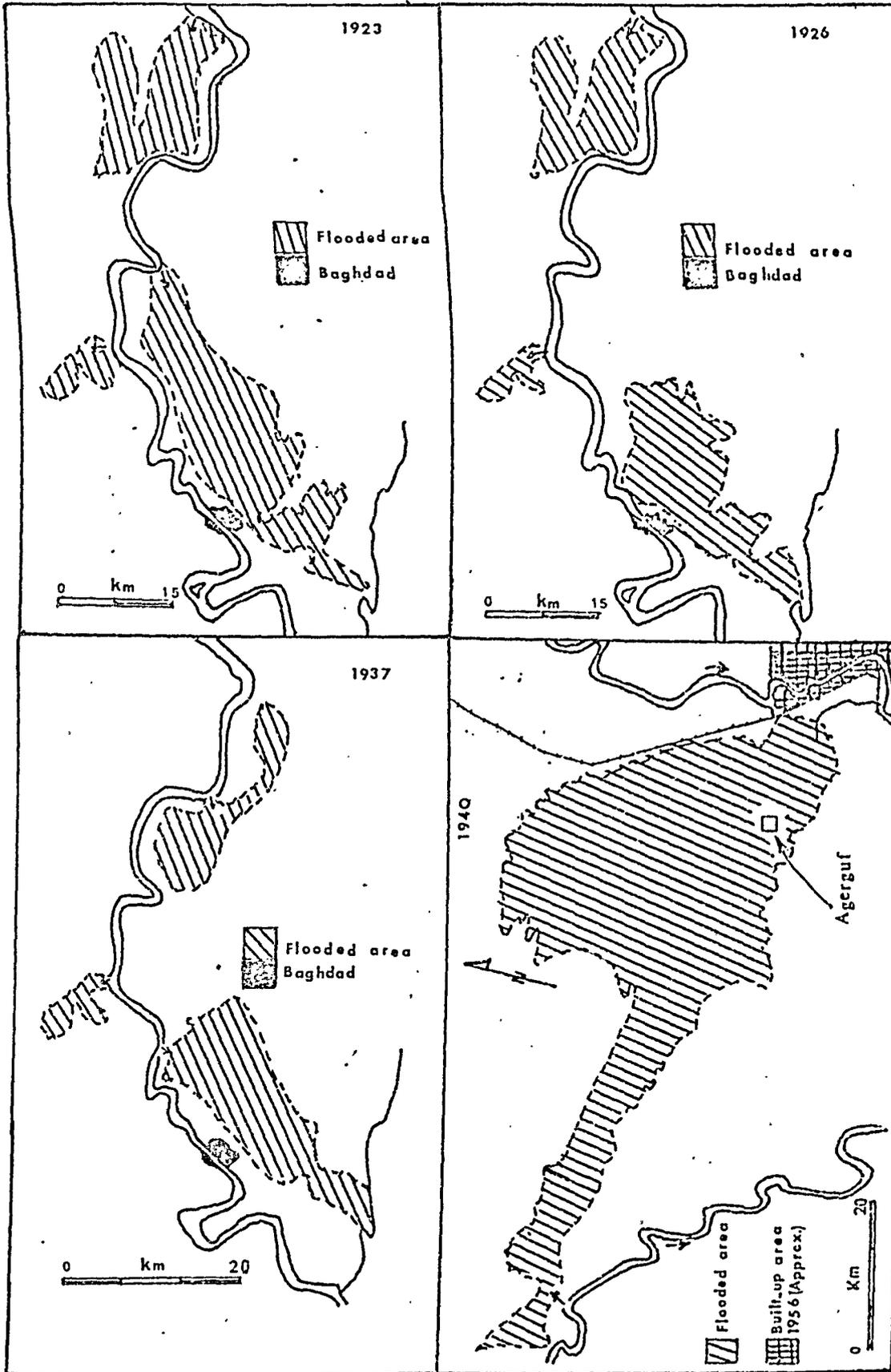
is usually still very low, but in 1932 it was on the 19th May, so that it can vary over a range of five months. In 45 years it has occurred once in January, 4 times in February, 6 times in March 22 times in April and 9 times in May. Similarly the lowest water, which usually occurs in October, was on the 19th September in 1913. In 45 years it has occurred 3 times in September, 26 times in October, 9 times in November, 4 times in December and once in January.

The maximum flow of al-Rafidain in the form of monthly averages, often occurs in a few days flood. It can threaten Baghdad for more than four months of the year from January (which is sometimes the time of lowest water) to May.²⁶

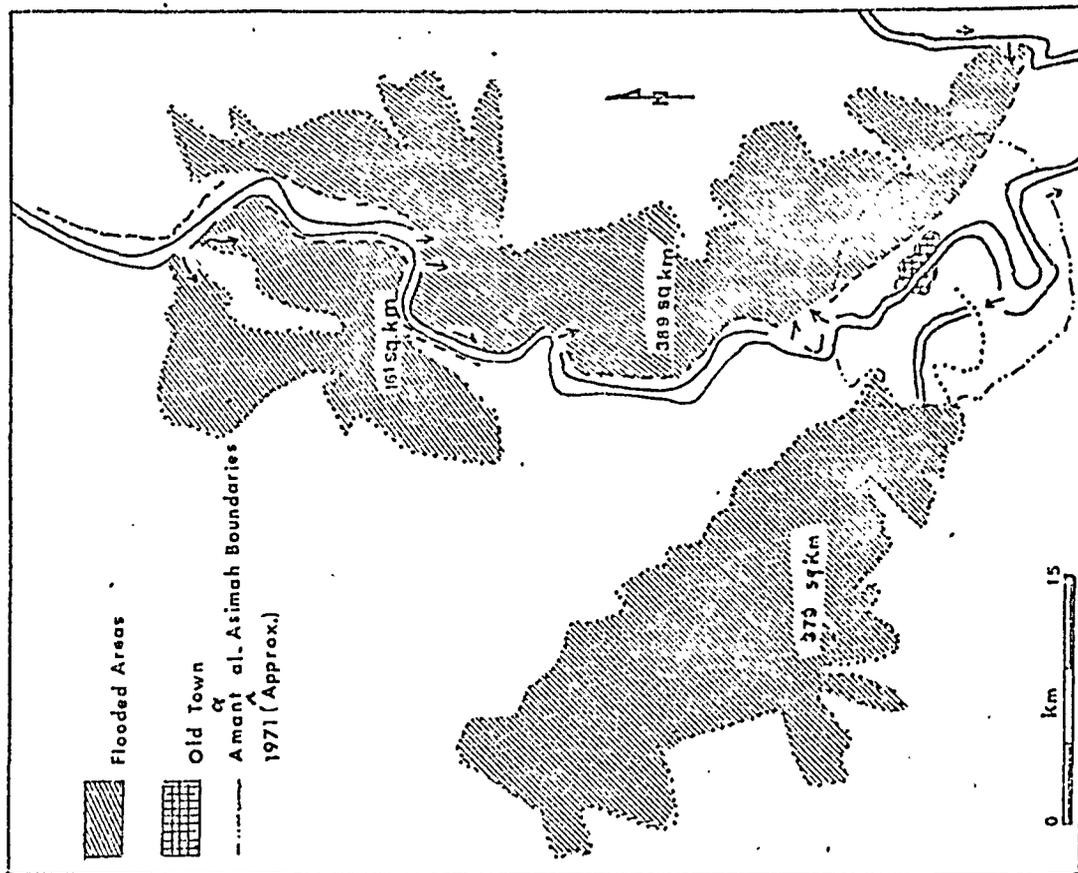
The flow of the Tigris depends closely on rainfall in the mountainous areas of Northern Iraq, eastern and south-eastern Turkey, and west and north west of Iran. The graphs of the annual variations in flow and in rainfall can be super-imposed on one another with only a slight lag owing to the time taken for the water to travel on average. Water takes 120 hours to travel from Mosul to Baghdad. The depth of the Tigris is of between 7.41 and 13.7 metres during the high and low seasons respectively, while according to al-Khuli it is 21.2 metres at the Sarai site in the city centre. The width of the Tigris at the same site is between 188.50 - 212 metres. Within Amanat al-Asimah limits the levels of the left and right banks of the Tigris are 3 and 1.8 metres below the maximum flood level respectively.

The level of the Tigris river at Baghdad is 31.5 m above M.S.L. while at Fallujah, for the Euphrates (opposite Baghdad) it is 39 m.²⁶

FIG. 4.13 THE LIMITS OF THE FLOODED AREAS, 1923, 1926, 1937, 1940.



D. THE FLOODED AREA 5, 1941



A. LIMITS OF THE FLOODED AREAS, 1954

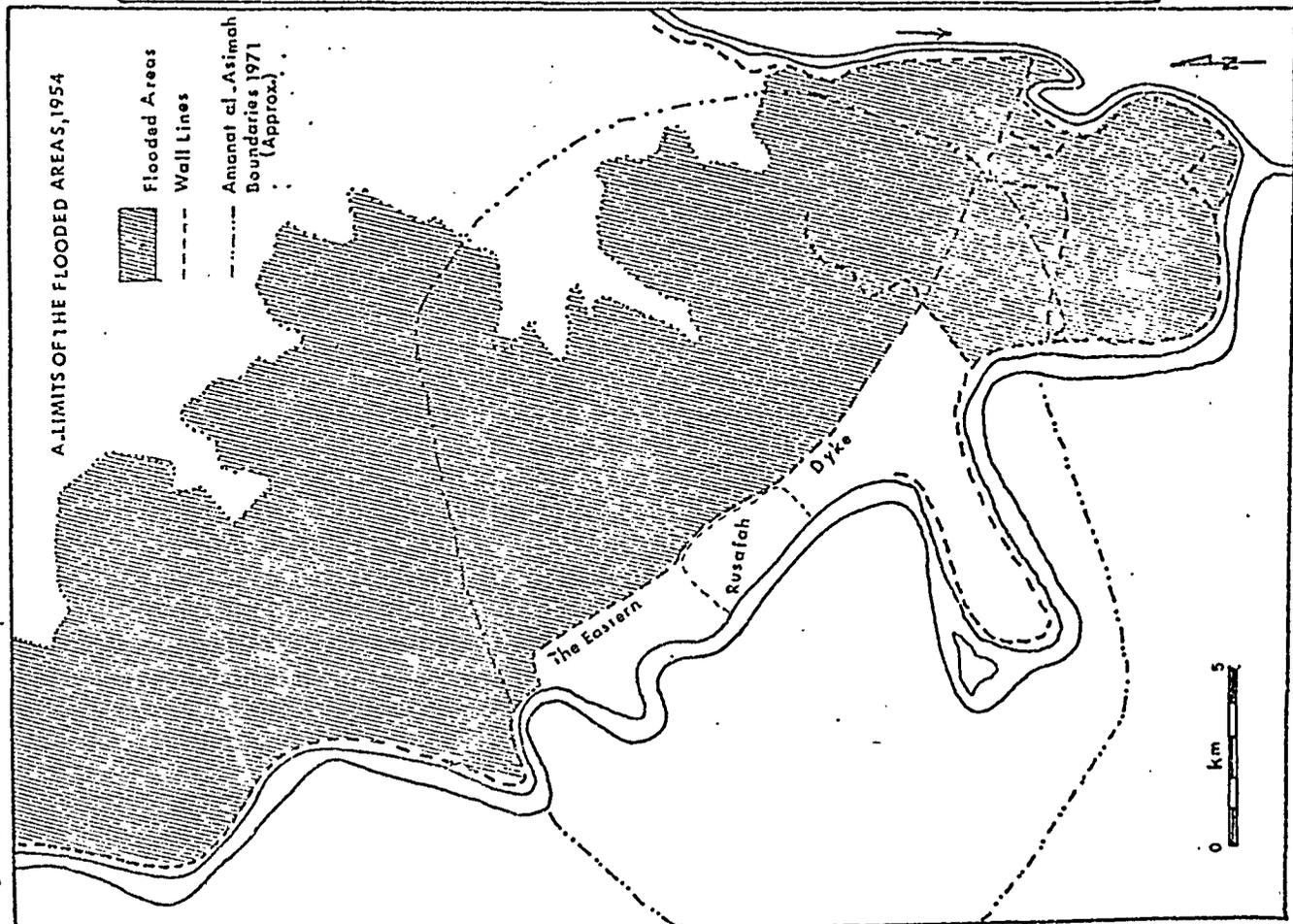


Fig. 4, 12

Baghdad has two distinctive systems of irrigation. There is the lift irrigation (by traditional as well as modern pumps), particularly along the banks of the Tigris and the Diyala, its Southernmost tributary, south of Baghdad. There is also gravity irrigation by several canals originating from the Euphrates (Fig. 2. 8) . They irrigate almost the whole of the basin area between the Euphrates and the Tigris in a manner reminiscent with that of Babylonia.

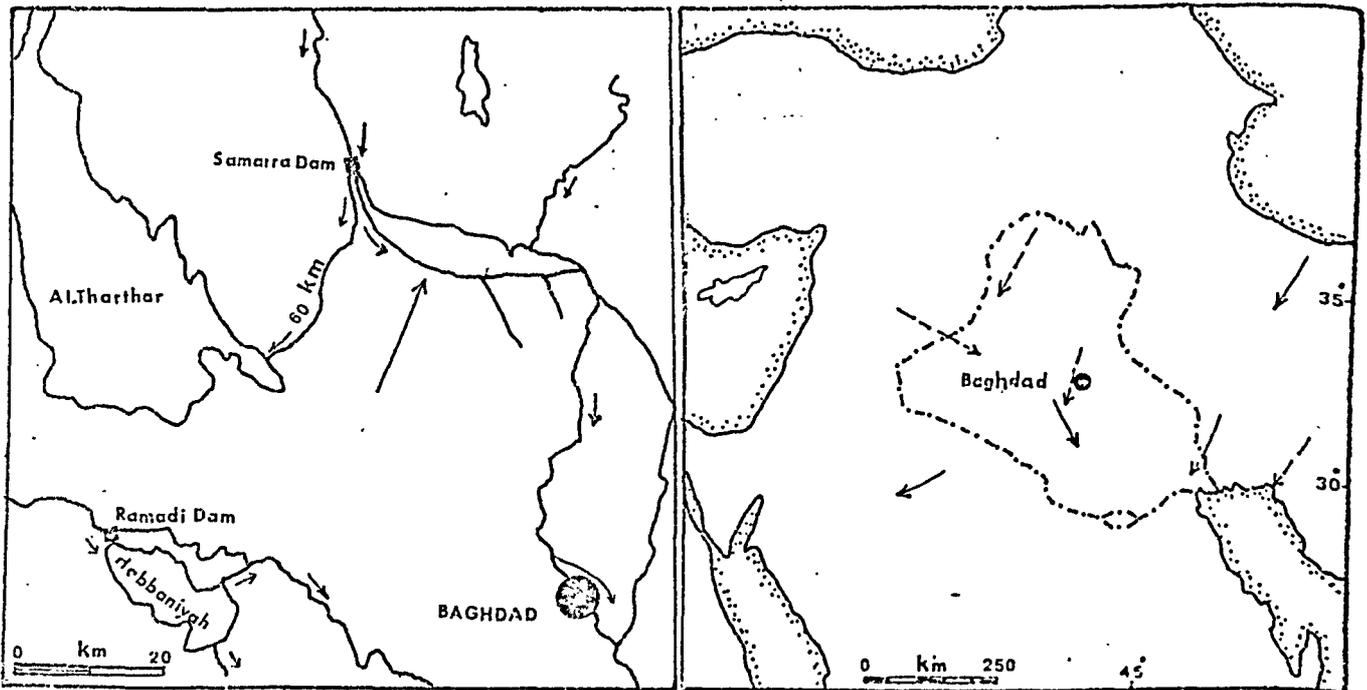
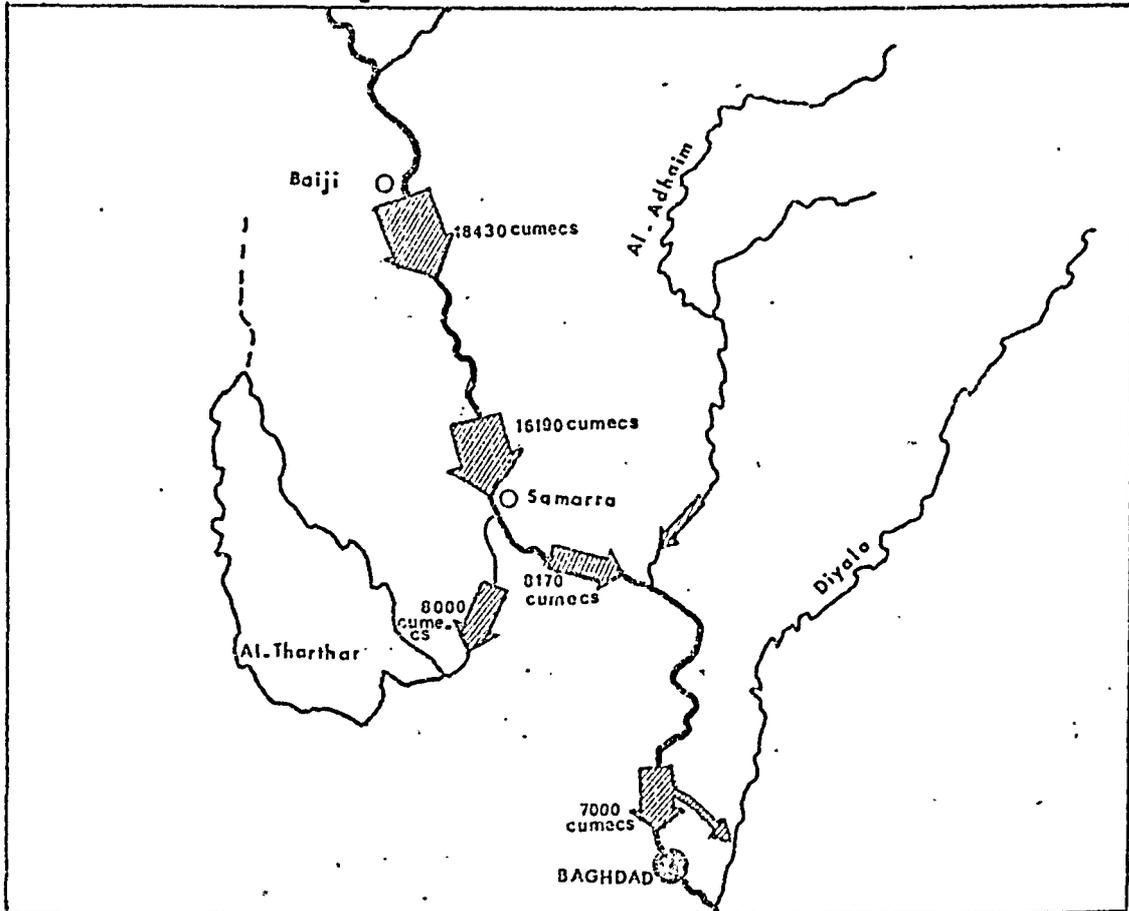
INFLUENCES OF FLOODING ON THE GROWTH PATTERN OF BAGHDAD (Fig. 4.8)

The great problem for Baghdad, as for the rest of Iraq is that of floods (Figs. 4.12, 4.13). Even when the flow of the Tigris is not above average normal high water, Baghdad on both sides would have to protect itself against the river to avoid damage on its banks. For example, on 12th February 1941 (Fig.4.12) the Tigris flowed at 13,000 cumecs at Samarra which was more than ten times its average annual flow. The Sarai gauge in the centre of Baghdad recorded a height of 35.75 m above mean sea level. At 7,637 cumecs it was the same height as that of the highest dyke in Baghdad.²⁷

The shape and climate of the Tigris basin explains the volume of these floods. The Tigris itself is a long drainage channel, running parallel to the eastern mountains, from which tributaries descend to feed it. From north to south these tributaries are, al-Khabur, Greater Zab, Lesser Zab, Adhaim and Diyala. Whenever the rain is widespread in the north-east they are all in spate at the same time and pour into the Tigris (Fig. 2.8.)

Even with its existing dykes (Fig. 4.3, 4.8) the river bed at Baghdad cannot carry more than 7 - 8,000 cumecs, so that for the flood of 13,000 cumecs already mentioned, there is a surplus of 5 - 6,000 cumecs having no normal outlet. It should be emphasised that the Tigris could rise above 24,000 cumecs, i.e. more than twenty times the annual average. Admittedly, this is an extraordinary maximum. Even since the great floods related in the Gilgamesh epic, the history of Mesopotamia has been full of accounts of enormous floods, likewise the history of Baghdad. Since its foundation, Baghdad has experienced many of the destructive floods of al-Rafidain. The floods of 1831, 1923, 1926, 1937, 1940, 1941, 1954 are just a few examples (Figs. 4.12, 4.13). In 1831 the Tigris washed away the walls of Baghdad and 7,000 houses in a single night, resulting in a plague with an average daily death toll of between 1,000 and 1,800 persons for several days.²⁸ Between 1907 and 1954 the Tigris has burst its dykes seventeentimes above Baghdad and eleven times downstream; it should be borne in mind that man-made breaches used to be made in the dams above Baghdad to protect the city itself. In 1954 the flood was especially violent. It was the worst since 1907 and was estimated at 16,000 cumecs. On 27th April the Tigris reached the 36 m mark above mean sea level. Baghdad escaped very narrowly. This flood, caused by the rains, nearly coincided with another flood caused by melting snow, which occurred three days earlier. Moreover Diyala and the Euphrates overflowed at the same time. Baghdad al-Jadidah and Tel Muhammad (Figs. 4.8, 4.12) had been inundated with the incident. The waters of the Euphrates reached Abu-Ghraib and other western

a. Al.Tharthar Project



b. Al.Tharthar and Habbaniyah Projects

c. Situation of Iraq.
 ———→ Prevailing Winds (Jan.)
 - - - - -→ " " (Jun.)

suburbs of Baghdad and created a 70 sq. Km lake, of 34 m depth. When it became dry seven months later, it had laid down alluvial soil to a depth of 3 cm.²⁹

To protect the capital and the whole of Mesopotamia, man began very early to raise the natural embankments and surround the city with dykes. Moreover, man adapted himself to this environment, when he began to plan for the larger floods. Dykes were broken at pre-determined points from which the water could spread into low-lying areas. On the right bank the water flowed into the depression of Agerguf (Fig. 4.13) and thence into the chain of depressions lying parallel with the Tigris at al-Gharraf, it followed a narrow channel between the site of the city itself and the natural embankments along the Diyala, finally flowing into the latter river; the channel is especially narrow at the level of Baghdad.

These methods had obviously been arrived at by trial and error, and only brought a very partial and intermittent security. It has only been quite recently in 1956 that Baghdad and Mesopotamia has been secured to some extent against floods by equipping the depression of Wadi al-Tharthar to receive the overflow from the Tigris (Fig. 4.14). A dam was built at Samarra, enabling the water level to be raised to 69 m. The water can then be diverted along a canal, 65 Km long to al-Tharthar² depression, where the bottom is at an altitude of 3 m. The depression has an enormous capacity; 86,000,000,000 m³ when the level is 60 m. When filled, this depression would form a lake

* Tharthar depression was mentio^{ed} as early as the 13th century by Yakut al-Hamawi and ibn Abdul-Haq. Al-Idrisi had drawn it in his famous map of 1664 A.D. (560 A.H.)

100 km by 40 km at the base, and 2,050 km² in area; it is comparable in size to the Dead Sea.³⁰ The diversion canal was used for the first time in 1956. It flows at the rate of 9,000 cumecs, thus protecting Baghdad from the flood less than 17,000 cumec. The canal was enlarged so that any flood would be of less danger. The highest quantity of water which flowed from the Tigris to al-Tharthar was recorded as 14 milliards m³ during the 1963 flood. Similar works have been carried out on the Euphrates. The Ramadi dam was constructed to divert the overflow to the al-Habaniyah and Abu-Dibis depressions. The Habbaniyah depression (Lake) is located on the right bank of the Euphrates south-east of the town of Ramadi. Its capacity is 3.26 milliards m³ covering an area of 426 km². Its bottom is 11 m lower than the average level of the Euphrates flood. It was planned to serve irrigation and to protect the western part of Baghdad (al-Karkh) and southern of Mesopotamia from flooding. It began to function officially on 5th April 1956 (Fig. 4.14) In 1959 another great dam and reservoir, Dokan, was completed on the Lesser Zab with 6.8 milliards m³ capacity at a height above mean sea level of 511 m. its water area is 2.70 km². It has been constructed for irrigation, the generation of electricity and for the flow control of the Lesser Zab.

The last great project was that of Darbandi-Khan on the Diyala, inaugurated in November 1961. The highest level that has been reached by its water was 455.42 m. It is capable of holding 3.5 milliard m³ of water and consequently reduces the culmination flows and the back water during floods on the Tigris downstream from Baghdad and thus maintains the full discharge capacity of the river in Baghdad.

From the above brief review, one can deduce that Baghdad has been a city under threat. At normal times the high water reaches an altitude of 34.60 m. On the 16th March 1926, it reached 35.28 m and it may well have exceeded this figure before 1906 when the regular observations began. Baghdad therefore had to have a site at an altitude of at least 35 m, and even this would not guard it against the highest floods. The problem of siting Baghdad was thus not easy.

As has already been mentioned, the Round City of al-Mansur was developed in a loop of the Tigris between Jaifir and Kadhimiyah, where the present altitude is between 34 - 39 m.

Karkh is at a height of over 35 m. and covers an area of 1,400 m by 600 m and the summit rises over 38 m. During the reign of the Caliph al-Mansur (754 - 775 A.D.) Baghdad developed on the Eastern side of al-Rusafah* which later became the main side of Baghdad (Fig. 4.8).

The Tigris embankment has an altitude of about 36 metres, over an area that is 2,300 m long and 1,500 m wide. Al Rusafah was surrounded by ramparts which enclosed not only the part of the area over 36 m high, but also a much lower area in the east corner which is less than 32 m in height. The builders of this rampart nevertheless took great care to leave free the line of low-lying points to the east of the town between it and the embankment of the Diyala. When the waters rose, the foundations of the houses built along the Tigris sufficed as a dyke on that side; on the north east, where the overflow went along a channel no more than 32 - 33 m in

* The Rusafah of al-Mansur was situated on the site of the later al-Adhamiyah, the outlying traditional centre. The Rusafah of today developed about two centuries after al-Mansur.

altitude, the waters reached the ramparts, whose gates were temporarily blocked with sandbags; and the city was completely enclosed by the two streams which rejoined south of the al-Karradah peninsula. The situation remained unchanged until the nineteenth century. In 1869, Midhat Pasha - The Wali of Wilayat Baghdad, who contributed a number of successful enterprises to the city, pulled down the walls and replaced them by al-Saddah or a dyke on the site of the old ditches.³²

In 1910 - 11 Nadhim Pasha wanted to mark out a vast flood-free perimeter round the city (Figs. 4.3, 4.8) For this purpose he began to build a dyke 11 km. long, starting from al-Sulaikh, then a village north of Baghdad, running west to east for 1 km, then turning ESE, 3 - 4 kms. behind the wall of the city which is known as Saddat al-Madinah, and finally curving towards the south. This dyke was subsequently breached; its construction took no account of the need to let the overflow pass through the channel behind Saddat al-Madinah since the water traversed it. It had surrounded all the built-up area of the eastern part of Baghdad, which was restricted within the old wall. Its only purpose was to protect Baghdad from the floods, unlike the ancient wall which was built for mainly military defensive aims during the Abbasid period. A considerable space was contained within the Nadhim Pasha dyke, probably because the built-up area was expected to fill it in the course of development. The walls and dykes, or at any rate their remnants have been used in this study as morphological lines in Conzen's sense³² to trace the evolution of the city, i.e. as lines indicating a temporary stationary town fringe serving to fix a subsequent fringe-belt of land uses developing on either side of it.

Other shorter dykes, besides the two dykes bounding the two ends of al-Rusafah, divided up the vast enclosure which had thus been protected from the water; two of them joined the Tigris to al-Saddah al-Sharqiyah (the Eastern Dyke) and to the Diyala, and later two others crossed al-Karradah peninsula. Thus in the case of disastrous floods, risks could be minimised as much as possible, this was the case up to 1956.

The construction of al-Saddah al-Sharqiyah had the additional effect of cutting off the channel by which the overflow escaped, this channel used to end at the southern base of al-Karradah meander. This route now being closed, a canal was cut in the sup^r used by the old Baghdad-Tehran highway. This canal extended the old channel no longer towards the Tigris but towards the Diyala.

On the right bank of the river, the only really sheltered place was the small settlement of al-Karkh. This was enlarged by building a dyke along al-Khir canal. Since 802 A.D. the sanctuary of al-Kadhim and its surroundings occupied an area of more than 36 m. in height in the middle of a meander spur. It was also made safer by a dyke which continued the one at al-Khir canal and barred the loop of the meander. Later, two new dykes were constructed forming a long triangle tapering towards the west and protecting the Baghdad-Damascus highway.

The exceptionally high flood of al-Rafidain in 1963, the greatest flood for the last 40 years, suggests that Baghdad is still not completely secure from such flooding. On 12th April 1963 the water level of the Tigris at Mosul was 220.20 m, giving an average flow of 8,000 m³ per sec. Thanks to the reservoirs of

Dokan, Darbandi Khan, Tharthar on the Tigris and Habbaniyah on the Euphrates the wave passed safely. The level of the water in the Tigris at Baghdad was, on 14th April 1963, 33.80 m, 20 cm below the ordinary flood level.

The recent development of the city outside al-Saddah al-Sharqiyah, and the destruction of al-Saddah has been too precipitate and the risk factors involved have not been considered. In 1965 seven breaches were made in al-Saddah al-Sharqiyah, each ranging between 15 - 170 m in width to allow recently built streets to penetrate through these openings. As a direct result of the uncontrolled growth of the city, it was proposed that a new dyke called al-Saddah al-Shamaliyah (the northern dyke), should be built (Fig. 4.3). It has since been constructed and starts 14 kms north of Baghdad, running 8 kms. eastward, whence it curves in a south-easterly direction and terminates on the Diyala river, some 20 kms above its confluence with the Tigris, or in other words some 12 kms to the north of Qanat-al-Jaish (Army canal). A canal is to be dug behind al-Saddah, with a length of 21.15 kms and width 150 m, with different depths. The depth of the canal is to start at 33.85 m and ends at 32.40 m. Its highest point is 38.50 m. and the width of 10.50 m. Another earth saddah is to be built to protect Madinat al-Jamiah (the university city).

Efforts to construct or complete the construction of the projects of "Aski Mosul" on the Tigris near Mosul, the Bakhmah project on the Greater Zab, al-Adhaim project on Adhaim tributary, and the High Dam of Anah on the Euphrates ought to be maintained to bring them into use. Only then can Baghdad and the whole of Mesopotamia be considered safe from the danger of flooding and continued growth of the capital may be more justified.

Ground Water:

Underground water has no economical importance in Baghdad's case, since al-Rafidain and Diyala are sufficient resources for agricultural and domestic needs.

Chemically the main content of underground water is calcium, sodium (more than 250 parts per million), magnesium cations, bicarbonates, sulphates and chloride ions. The nitrate content is low compared with other formations. 3,500 parts of salt per million are recorded in the undergroundwater within the shallow zone (depth less than 50 feet) while it was found to be 2,000 parts per million in the deeper zone.³²

Although the ground water level in Baghdad is relatively deep, in average 5 m below the ground surface, it still has various levels, fluctuating between 1 and 5 m due to different flow rates of surface water, climatic seasons, capillary action of crops through the zone of aeration and the drainage system.

Usually the underground water level rises in December. It is between 50 - 150 cm during March and April. It is lower during the summer rather than winter mainly due to the evaporation variability. Generally Baghdad's site has a deeper level of underground water compared with the southern parts of the Mesopotamian Delta.³³ With very limited exceptions the ground water is highly mineralised and saline. The salinity increases both in the horizontal direction, with increasing distances from the river, and vertically with increasing depth. Therefore ground water is not suitable in content for domestic use and irrigation purposes and is only fit for industrial use within certain limits.

However, ground water is used in the town for auxiliary purposes in industry or reservoir intakes. It is also used as kneading water in the brick kilns near Baghdad though it deteriorates the quality of the final product.

It is natural as a result of the previously discussed prevailing climatic conditions, i.e. scanty seasonal rainfall, coupled with continental characteristics of temperature, to find spring steppe and sparse summer vegetation only. One can see the thorn *Prosopis Parota*, a perennial weed on the banks of the Tigris. Tamarisk is the main common vegetation in the Baghdad area.

1. H.C.R. Encyclopedia Britanica, 9th edition, 3(1898) 234, M. Jawād and A. Susa, Dalil Kharitat Baghdad Qadiman Wa Hadithan, (A guide to the map of old and modern Baghdad) Baghdad (1958) 28; A. Susa, Fai Baghdad, Qadiman Wa Hadithan (The Irrigation of Baghdad, In Old and Modern Times,) in Baghdad an Illustrated Historical Survey, edited by the Iraqi Engineers Association, Baghdad (1969) 93.
2. A. Susa, Atlas of Baghdad, Baghdad (1952) p. 2 - 5, (in Arabic) A. Al-Duri, Art of Baghdad, Encyclopedia of Islam, London 1 (1960) 908; G. Le-Strange, Baghdad during the Abbasid Caliphate, London (1900) Maps 111 and 20.
3. Susa, op. cit. (1952) 4 - 5; Le Strange, op.cit., Maps 111 - 1V pp. 47 - 50, Sasa, op.cit., 1969, p. 80; T. al-Amid, Baghdad The Round City of al-Mansur, M.A. Thesis submitted to the University of Baghdad in Islamic Archaeology, Baghdad (1967) 69, (in Arabic).
4. Susa, op.cit. (1952) 4 - 5
5. Al-Hafidh Abi Bakr al-Khatib al-Baghdadi, Tarikh Baghdad, (The History of Baghdad), Cairo (1931) pp. 6 - 7; Susa, op.cit., (1952) 2-3; Jawād and Susa op. cit. (1958) 15.
6. Susa, op. cit. (1969) 93 - 100.
7. J. M. al-Khalaf, Geography of Iraq, Physical, Economic and Human 3rd Edition, Cairo (1965) 41; R.C. Mitchell, Physiographic Regions of Iraq, Bulletin de la Société Géographique d' Egypte, T.30, 85, P. Buringh, Soil and Soil Conditions in Iraq, Baghdad (1960) 40.
Baghdad, Aspects of site, Bulletin of the College of Arts and Science, Baghdad (1966) 21-2
8. G.M. Ahmed, op. cit. 20; G. Husted, The Physical Basis of the Geography of Iraq, Baghdad, (1948), Translated into Arabic from English by J. M. al-Khalaf, , 50.

9. N. Majid, Soil Characteristics of Iraqi Delta, Bulletin of the Iraq Engineers Association, Baghdad, (1955) 9;
10. A. Arar, Saline Soil Reformation in Iraq, The Third Iraqi Conference of Engineers, Baghdad, (1961,) . 23 (in Arabic).
Al-Khuli op. cit. 10; Al-Khalaf, op. cit. 22; Ahmed, op.cit. . 23.
11. Majid, op.cit. .9
12. Irrigation Development Commission, Directorate General of Irrigation, Report on the Control of the Rivers of Iraq and the utilisation of their waters, Baghdad (1951) 4.
13. W.L. Powers, Soil and Land Use Capabilities in Iraq, A Preliminary Report, Geographical Review, 44 (1954) 373;
Mitchell, op.cit. 86 - 7.
14. Hans H. Boesch, El-Iraq, Economic Geography 15(1939) 326.
15. Naval Intelligence Division, Iraq and the Persian Gulf, London, (1944) 167; Central Statistical Organisation, Ministry of Planning, Annual Abstract of Statistics, Baghdad (1968) 6, Table 4.
16. M. R. Al-Feel, Iraq, Geographic Study, Social and Economic Development, Baghdad (1964) 15.
17. A.H. al-Shalash, The Climate of Iraq, Amman (1966) pp 19,71-75.
18. Climatological Section, Directorate General of Civil Aviation, Climatological Normal for Iraq, Baghdad, 14 (1965) 29; Central Statistical Organisation, op.cit. (1968) 20.
19. Al-Shalash, op. cit. 83.
20. W.B. Fisher, The Middle East, A Physical, Social and Regional Geography, ^{London} (1952) cart 4; Central Statistical Organisation, op.cit. (1968) 20, Table 17.

21. Baringh, op.cit. 42; Central Statistical Organisation, Ministry of Planning, Annual Abstract of Statistics, 1966, Baghdad, (1971) pp 19 - 20; Central Statistical Organisation, op.cit. (1968) 23, Table 20.
22. Ahmed, op.cit. pp 23, 24; Buringh, op.cit. 171
23. F.A. Ahmer, Al-Islah al-Zirya; Fial-Iraq, (Agrarian Reform in Iraq) (1958), 5; Irrigation Development Commission, op.cit. p 8, Harza Engineering Co. and Binnie Deacon and Courley in Association, Hydrological Survey of Iraq, Discharge for selected Gauging Stations in Iraq, 1930 - 1956, Baghdad, (1958) pp 28 - 54.
24. Al-Khuli, op.cit. 25; Buringh op.cit.25.
25. L.E. de Vaumas, Introduction Geographique l'Etude de Baghdad, Arabica, 9 (1962) 239.
26. Al-Feel, op.cit. 27; al-Khuli, op.cit. 6.
27. A. Susa, Faiathanat Baghdad Ei al-Tarikh (The Floods of Baghdad in History) Baghdad 2 (1965) 547.
28. J. Bailie Fraser, Travels in Koordistan, Mesopotamia etc. London (1934) pp 233 - 254.
29. Al-Khalaf, op. cit. 44.
30. L.E. de Vaumas, op. cit. pp. 240 - 242.
31. S.H. Longrigg, Four Centuries of Modern Iraq, Oxford, (1925) 285; Susa, op.cit. (1952) 26 - 27; Susa, op.cit. 3 (1965) pp. 414 - 417.
32. M.R.G. Conzen, Alnwick, Northumberland, A Study in Town-Plan Analysis, London (1960) pp. 40,58.
33. Ground Water Section, Ministry of Municipal and Rural Affairs, Personal Interview, Baghdad (1971); Ahmed, op.cit. pp.23 - 24.

34. Majid, op.cit. 9; A.I. al-Baghdadi, Al-Miah al-Jawfiyah
Fi al-Iraq (The underground Water in Iraq) Report No. 3,
Submitted to the Sixth Arab. Conference of Engineers, Baghdad,
(1955) 3 - 11.

PART III

The Earlier Historical Development of Baghdad, from
al-Mudawwarah (The Round City), to the Modern Era, 762--
1865. (First Morphological Phase).

CHAPTER 5

The Earlier Historical Development of Baghdad, From al-Mudawwarah (The Round City), to the Modern Era, 762 - 1869. (First Morphological Phase)

Introduction:

Baghdad's development between 762 - 1869 has been divided into eight sub-periods. These sub-periods may be defined by historical and political criteria. In each period Baghdad was under a different ruler. The socio-economic life of the city and the whole of Mesopotamia was influenced essentially by the events of each era. These events were either natural or human. The social structure and traditions were influenced by these factors. Accordingly the urban physiognomy has been affected both in form and pattern.

Morphologically it is impossible to adopt clear cut historical morphological phases within the whole of this long era, because few public buildings or other structures have remained from the specific historical period involved (Fig. 5.21). There are no documents or maps relating to the building fabric and the city layout. Therefore the subject matter of this chapter cannot be approached by direct field evidence other than the analysis of surviving lineaments in the town-plan in conjunction with historical evidence in terms of primary resources such as maps, traveller's writings and secondary resources such as historians writings. Whereas the subsequent phases have been approached on the basis of field observation.

The historical layering during this long period, worked mainly on the social fabric of the society. The development of the society during that time is characterised by great unevenness. The city had its flourishing periods, particularly before 1258. Also it had its violent disruptions caused by invaders who generated sectarian disputes. Floods are another disruptive factor.

Baghdad experienced long periods of stagnation which frequently lead to the social and physical decline of the city. This is seen following the collapse of the Abbasid Caliphate. In common with many other Arab towns that passed under the same occupational powers, Baghdad suffered long periods of stagnation. The resulting socio-economic deterioration stood in complete contrast to many European towns. The latter showed greater steadiness of political and economic development associated with greater cultural development. This obviously has resulted in rather more distinct styles of forms and patterns. Thus in the Western case, historical layering has been more copious in influencing the morphological evolution of towns. In terms of the influence on the present geography of Baghdad the developmental processes which took place in the city between its foundation and 1869, can be considered as a long introductory morphological period to the modern development beginning late in the 19th century.

Contrary to expectation the physical heritage of Baghdad's historical periods has great importance for the modern townscape of the city. (All the surviving buildings are of a public nature, representing mainly the commercial, religious and administrative land uses. They are mosques, schools, palaces, bazaars, and their annexes. Their importance is two-fold, functional and morphological. They enabled the overall spatial layout of both population and land uses to be traced. Most of the remains were of central location around which the life of the population evolved.

Another difficulty against the adoption of separate historical morphological phases during that era is that nearly all the surviving traditional houses date back only to the 19th century. Almost all the houses built before the 19th century have disappeared owing to

the perishable nature of Mesopotamian building - materials. These buildings and their arrangements have never been studied by historians or travellers before the second half of the 19th century. Because of the tradition of form has survived, it is possible to consider the earlier historical development of the city as one morphological phase affecting the next morphological phase.

a. The First Abbasid Period: 762 - 946 (145 - 334):

This period is significant in the development of present Baghdad, though most of the physical layout of the city has changed radically. The traditional four centres of Baghdad i.e. Rusafah, Karkh, Kadhimiyah and Adhamiyah can be attributed to this period, at least in terms of location. During this period the city stabilized its functional significance as a capital. The central bazaars in Rusafah, and the shrines of al-Kadhim and Abu- Hanifah emerged in this period and persisted as functional and morphological nuclei around which past and present Baghdad has evolved. This period also gave Baghdad several of its essential plan and physical elements. The staggered or 'dog-leg' entrances of both, houses and traditional public buildings, the incipient fringe-belt and perhaps the zuqaq system of traditional Baghdad have their roots in this period. Unfortunately most of the physical elements of the city have disappeared, owing to natural and human disasters, yet the overall present pattern of the city cannot be understood without tracing its evolution during this period. There is not topographical evidence of the Round City of Baghdad. This is hardly surprising in view of the building materials available in the Mesopotamian plain. Islam has also encouraged the use of fragile and perishable

materials by its unconcern for the durability of earthly things. The use of fragile materials symbolizes the frailty of material things and the unimportance of the individual.¹ Another important factor is the turbulent history of the country. A Secondly glance at this history shows numerous examples of foreign occupations and associated atrocities, the worst being the Mongol occupation. As yet no work has been carried out to determine the exact site or excavate the physical remains of al-Mudaww^aah.* Accordingly, the investigator ought to arm himself with a lot of information in order to be able to comprehend what is to be seen today.

Here also one has to consider the crucial blank in literary sources about Baghdad throughout its history. Historical writings of that era have centred mainly around the lives of caliphs and political leaders. They are also flavoured with legends and popular beliefs and myths. The credibility of these writings is therefore undermined and the details that are considered relevant in this context are minimized in their importance. Studies of location, interior disposition and arrangements are completely ignored. This makes it impossible to construct precisely scaled plans and place their original details. Any maps and plans of Baghdad in its historical phases are hypothetical and highly speculative. However, the works of al-Khatib, al-Tabary, Yakut, Jawad and Susa, Le Strango, Levy and Coke are very valuable contributions.²

* Abbasid coins and bricks have been found in Ataifiyah, the approximate site of the Round City; justifying proper excavation. The British Museum possessed coins minted in Baghdad in 763, one year after the city's foundations were laid.

Fig. 5.1b Al-Mudawwarah Location

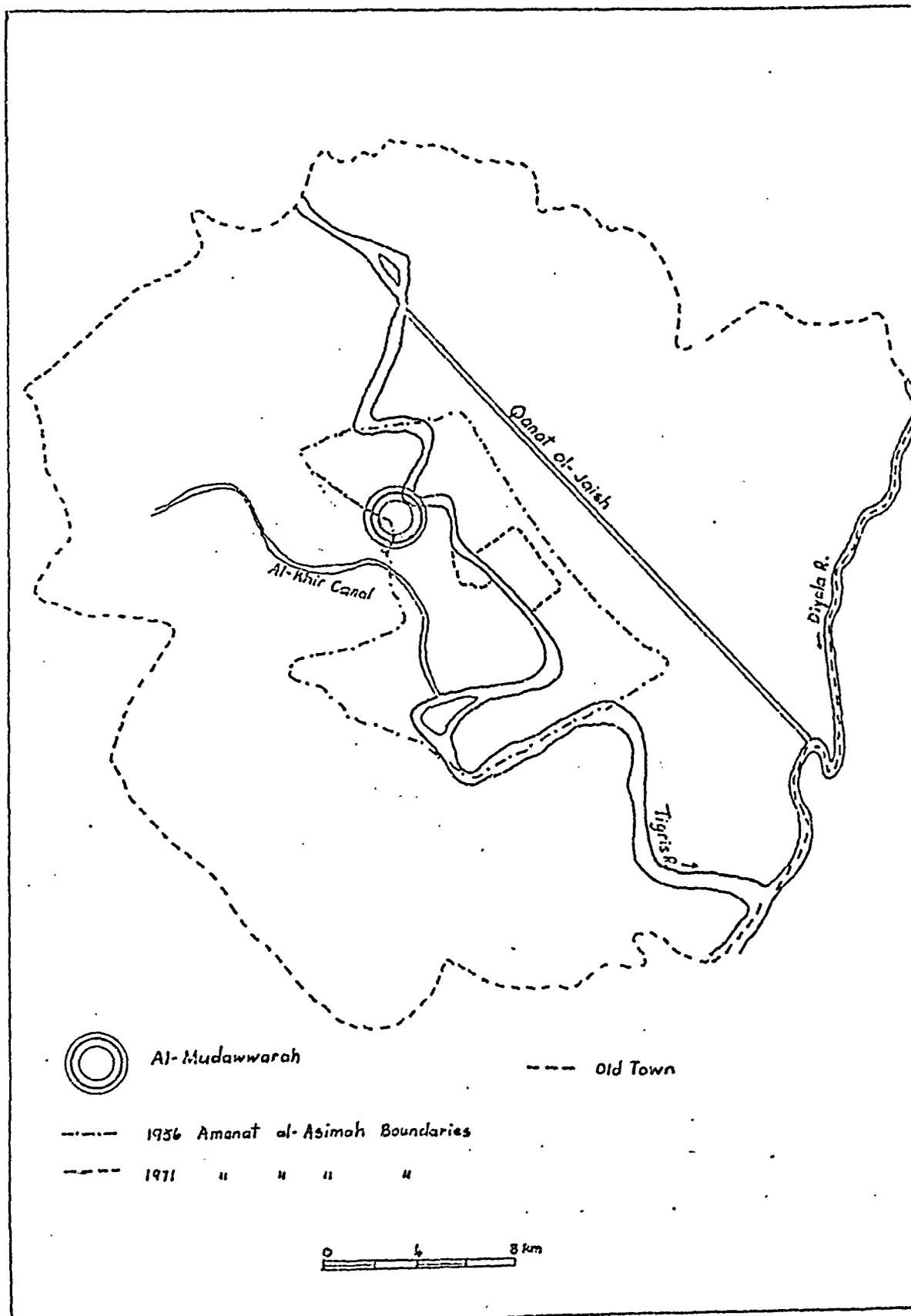
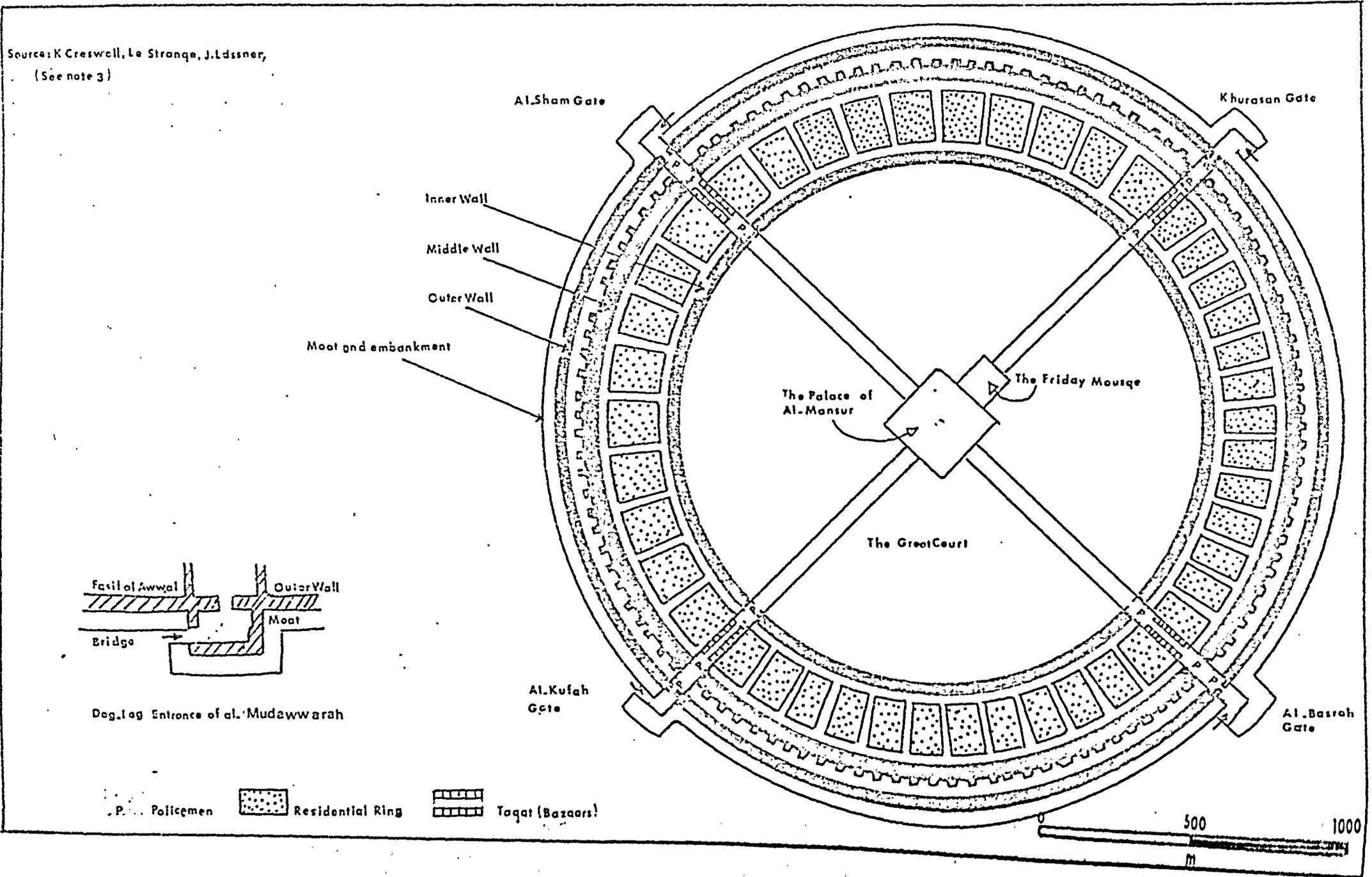


Fig 5. 1a . AL-MUDAWWARAH (THE ROUND CITY)

Source: K Creswell, Le Stranqe, J. Ldsner,
(See note 3)



In contrast to many other Arab towns, Baghdad's plans, together with names of its streets, mahallahs and bazaars changed frequently. This has contributed to the difficulty of tracing the plan evolution of the city.

The changes in the complexity of the physical, socio-economic and political factors are fairly faithfully reflected in the development and changes of Baghdad's structure and form. Baghdad has reaped the benefits as well as carried the burdens of such changes. It is intimately linked with the fortunes and misfortunes of the country, and each successive phase of Mesopotamian history is reflected in the structure and shape of the city.

It is probably useful to classify the forces which influence the physiognomy of Baghdad into two kinds. Firstly, constant forces, i.e. the influential forces of natural topography, cultural relationships controlled by religion, the geographical location of the region in relation to the rest of the country and the nature of the national territories that surround it. Secondly, variable forces, i.e. political influences reflected in the evolution of the city as the centre of the Arab Empire.

The Round City (Figs. 5.1a, b.)

Because of its disappearance, any physical significance of The Round City in present day Baghdad is absent. However, Baghdad has been influenced by al-Mudawwarah in terms of function and patterns. The religious and administrative functions were of greater importance, reflected by the central position of their associated buildings. These maintained maximum accessibility from all sides of the city. The mahallah concept and the importance of

commercial land use symbolized by bazaars also had a high priority. Since then these elements have continued as the major functional and morphological constituent elements of Baghdad's evolution influencing the whole locational pattern of the city.

The Round City has thus influenced the evolution of Baghdad in the subsequent periods in terms of principles of layout and in determining the functional and socio-economic hierarchy of various land uses.

(The Round City was laid out on the West Bank*of the Tigris between the present-day Kadhimiyah and Jaifir. It was superimposed on a fertile region from which it drew its supplies and over which it ruled. It was surrounded by a mesh of rivers and canals that connected the city to the urban settlements of the Euphrates and turned the whole region into a thriving area of gardens and populations. It was strategically placed within the al-Rafidain Waist, being a stage terminus of trade on the great route from Kurasan to Damascus and Mecca, and not far from Persia the land of the Abbasid supporters (see PartII).

* For convenience the terms West Side (bank) and East Side, have been adopted to indicate the developed areas located respectively to the North West, West and South-East; and to the North-West, West and South-East. Thus the West Side includes al-Karkh and the East-Side includes al-Rusafah. In the same way the terms North and South have been used to indicate the North-West and South-West parts of Rusafah's medieval wall respectively.

Contrary to almost all of what has been written about the transfer of the capital from Damascus to Baghdad, this historical event marked the decline which led to the collapse of the Arab State. This is attributed to the disintegration of the 'Abbasid Caliphate caused by politico-military groups of non-Arab origins! These groups, islamised but superficially stood aloof from or even opposition to the Arabic-speaking peoples whom they were supposed to rule.⁴

Early in its development Baghdad became the meeting place of the Arabic, Aramaic, Persian and Turkish cultures. The scantiness of the Greco-Byzantine element was compensated by the active translation of their intellectual heritage into Arabic.⁵ Most of these civilizations had left their own marks in the life and pattern of Baghdad.

The city of Baghdad was constructed in a great hurry between 762 - 766 (145 - 149),⁶ using massive bricks which, because of their very size,* were impossible to bake and thus proved to be short-lived, unlike the Acropolis, the Pyramids or the great Gothic Churches of Europe which owe their survival to the use of time-resistant stone.

Characteristically, a symmetrical street system, a strictly geometrical residential ring and circular triple walls are the components of the townscape of the Round City. Baghdad al-Mudawwarah was considered as a revolutionary achievement in town planning, although it came to maturity only in the following two centuries.

Military and socio-political factors were considered when the new capital was planned in the form of concentric rings. Apart from

* 1 x 1 dhiras. (= 0.5 x 0.5 m)

the river-canal system, the site of Baghdad offered no natural topographical barriers to be used for defence, compared with many medieval towns in Britain. Consequently, fortification walls became indispensable plan elements to the proposed new capital.

The Round City had four gates on rectilinear axes intersecting under the green dome of the Golden Gate Palace of al-Mansur with the axes extended to become the main highways to other regions. The first two walls, surrounded by ditches, had cells for soldiers incorporated in them. * The inner third wall was a sort of buffer line separating the soldiers and certain other inhabitants of the city from al-Rahbah al-Udhma (the great court), which housed the caliphate precinct and government buildings, forming yet another zone surrounding the caliphal palace and mosque. The middle or second wall was the greatest because it was built with mud bricks which are less resistant to the enemy's catapults.

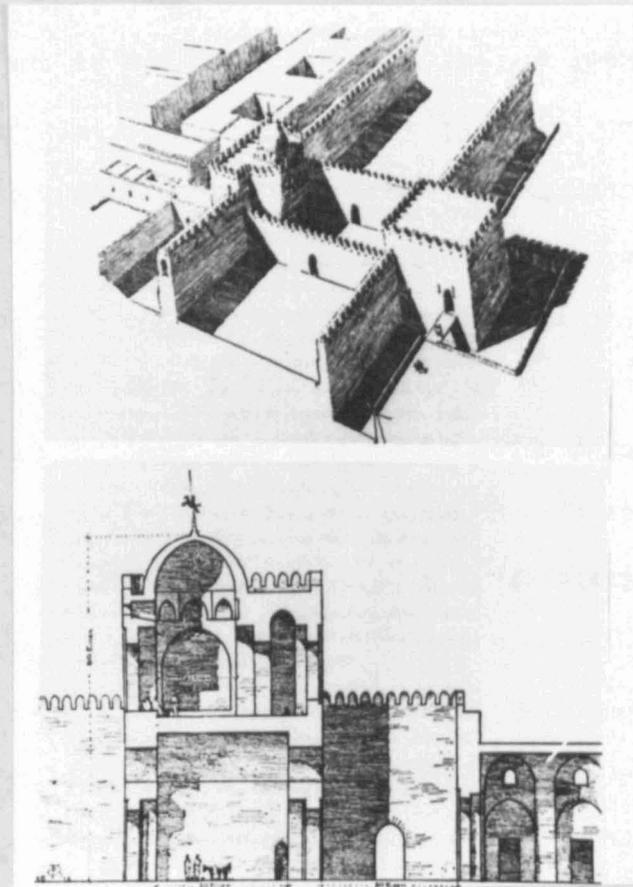
The intervallum between the middle and the outer wall (al-Fasil al-Awwal) was left without buildings to serve as a military exercise course. The other ring area between the buffer and the middle walls (al-Fasil al-Thani), was the residential area, or the city proper, divided into four quadrants, by the thoroughfares running from the four equidistant gates. Consideration of the Caliph's personal safety was paramount. This could be seen as each residential district was rigorously shut off from the others except for gates which were

* The ditch was 40 dhiras (20 m) wide.

* * Its width was 45 m (90 dhiras) at the foot and 12.5m (25 dhiras at the top, being 30 m (60 dhiras) in height. It had 113 towers, 28 between each two gates except those between al-Basrah and al-Kufah gates which numbered 29.

* * * This ring was 150 m (300 dhiras) wide.⁹

Fig. 5.2



a. The gates of al-Mudawwarah



b. Traditional Mesopotamian quffah

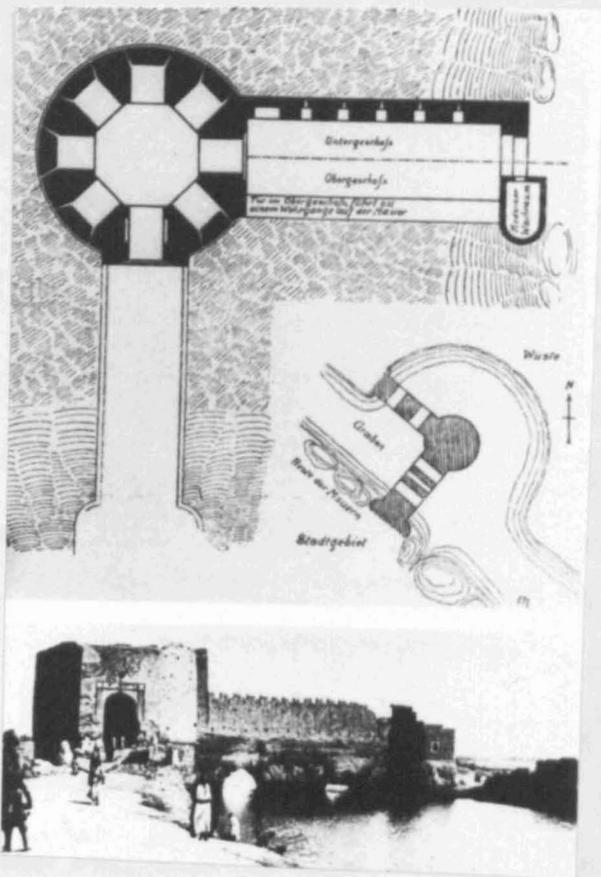
strongly guarded and could be closed to prevent any concerted action in case of uprisings. Each residential sector had its street hierarchy, incorporating certain cul-de-sac alleys, hammams or baths, and other communal establishments.

It is important to remember here that the residential fiefs were granted in terms of tribal organisation. Certain tribes occupied certain sections, and from that time on up to the 1950's almost all the mahallahs of traditional Baghdad, have been influenced topographically by such tribal and kinship considerations.

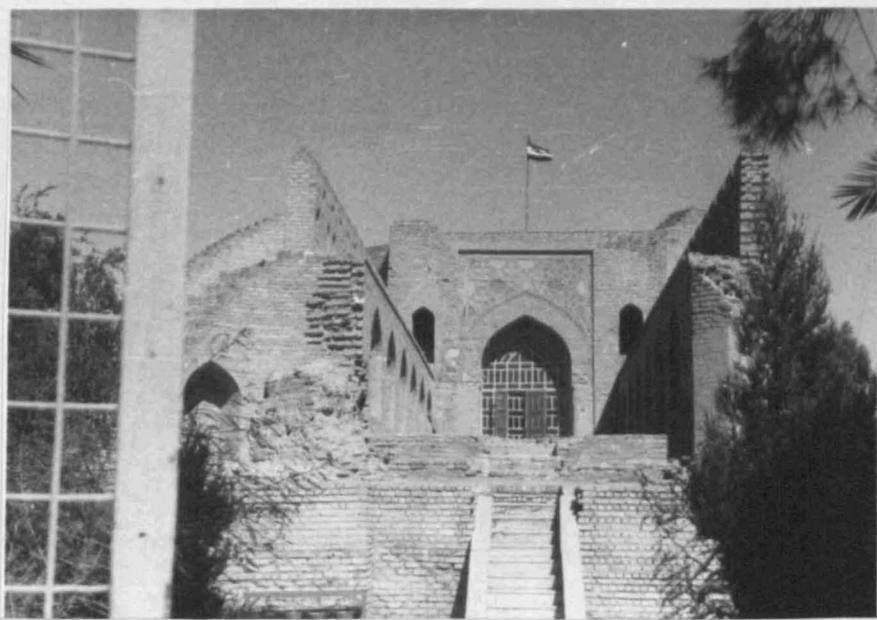
The four gates of the Round City (Figs. 5.1b, 5.2) were respectively, Khurasan (north-east) al-Basrah Gate (south-east), al-Kufah (south-west) and al-Sham (north-west). Four main caravan routes to different parts of the empire started from these gates, the longest and most famous one went from Khurasan gate over the Tigris, traversing al-Rusafah, and striking straight across Persia as far as China.

Each of the four gates of the outer wall was surmounted by a great gatehouse. The hall or passageway, together with flanked porticos, were vaulted with burnt bricks set in mortar.¹⁰ Passing through this hall and thus traversing the outer defences, the thoroughfare from the gatehouse would lead to a small square enclosed by walls, occupying the space between the gatehouses of the outer and the middle wall respectively. Each gatehouse on the middle wall was surmounted by a great dome or cupola with a portico in front of the gate-way. The top storey of each gatehouse in the middle of the great wall was occupied by an upper Majlis (chamber) overlooking the city.¹¹

Fig. 5.3



a. The medieval al-Wastani Gate of Baghdad and its plan (after Makia)



b. Al-Wastani Gate - present state

The road between the gates of the middle and the inner walls, began and ended respectively in an outer and inner square - a double line of Taqat (arcades) connecting the two. From these squares and arcades access was obtained right and left to the residential ringed area.* The bazaars within the Round City had originally occupied the four arcaded roads which, according to al-Khatib, were highly crowded and offered cheap merchandise.¹³ At the end of the arcades came the central area, where stood, as mentioned earlier, the Royal Palace with its own annexes for harims, eunuchs and functionaries.¹⁴

From textual references one can infer that the entrances to the Round City were of a "dog-leg" patterns, forcing an attacker to turn right thus leaving his left hand side unprotected, when entering the angle. This broken entrance occurs again in almost all the houses built before 1920 in Baghdad, also in the still existing gate of medieval Baghdad which can be considered as of the same type as the gates of the Round City, (Figs. 5.2, 5.3).

It is rather unusual to find the main initial plan element to have been the palace of the caliph, and not the mosques as is the case in almost all Arab towns (Figs. 5.1a)

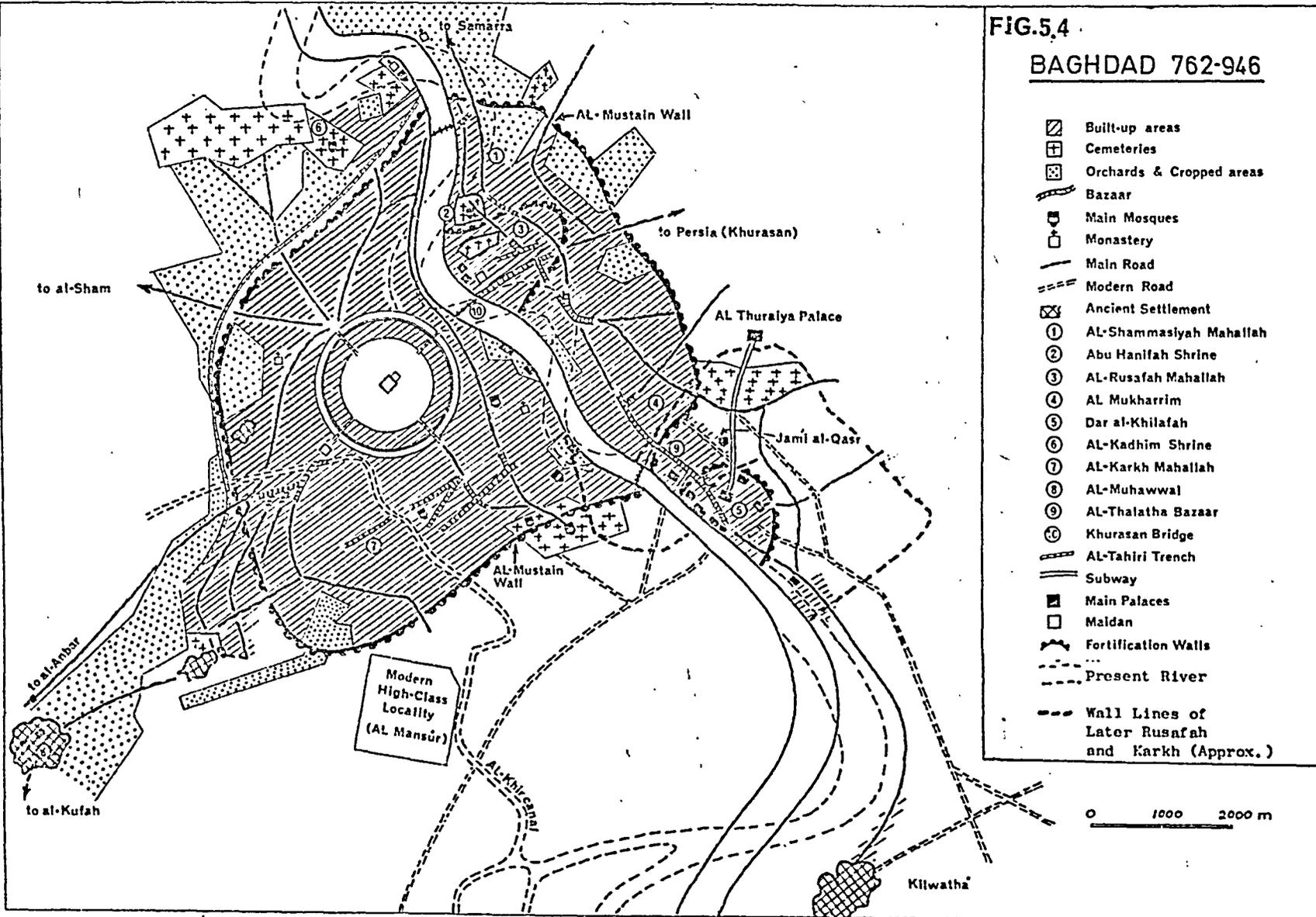
The most conspicuous feature of the Round City was the great green dome of the palace, which was surmounted by a figure.** It dominated the townscape of the city being visible from anywhere in it. This palace stood as the official caliphal residence for about half a

* It is reported that each archway had 53 arcades on either side.¹²

** Probably it served as a kind of weather vane, though the popular superstition declared that it pointed its lance in the direction from which a rebel army might be expected.

FIG.5.4

BAGHDAD 762-946



F. P. 11

a century, when it collapsed as a result of a great thunderstorm and flood in 941.¹⁵ The "Friday-Mosque" of the Round City being perhaps the first in the city, had been repeatedly rebuilt and enlarged to meet the ever-increasing number of worshippers. For five centuries the weakly prayer continued to be held in this mosque, being the official mosque from which the caliph addressed his subjects, and at which he tested his popularity. It collapsed in 1248 as a result of a disastrous flood, and the last mention of it was by Ibn Battutah, the celebrated Arab traveller in 1327.¹⁶

The socio-political reason for such perfectly circular plan is obvious as the caliph was in the centre, surrounded by his sons, leaders of the army, then by the public, all of which were at the same distances from his residence. When he accepted the plan, al-Mansur, the Prince of Faith, treated it as a symbol of Islam. The planner, however, may have been transferring another idea of fire worshipping which was dominant in Persia. A fire symbol used to be always in the centre. According to 'Abdul Jawad', the city was influenced by preceding towns such as Hatra (Hadhar) ^{and} many other Assyrian towns.¹⁷

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Baghdad the Metropolis: (Fig. 5.4)

In this period Baghdad has received some functional and morphological new patterns. The city has undergone radical layout readjustment. The functional factor was the main reason for such spatial organisation. Baghdad developed rather distinctive functional and consequently morphological areas. The administrative, religious and commercial areal differentiation adopted in this period was intensified in the following periods.

However, the physical expansion together with the specialisation of land uses emerging during this period were of spontaneous nature compared with the spatial layout of the Round City which had been carefully planned beforehand.

The spatial pattern of present Baghdad goes back to this period when the city developed around the fixed sites of shrines, and also acquired its incipient fringe-belt area which became subject to various functional changes and formative processes.

Since that period religious and commercial uses of land have become intimately related. This is expressed by their physical proximity and has been influenced by the overall population distribution, the road network and the authority's decisions at various times.

First

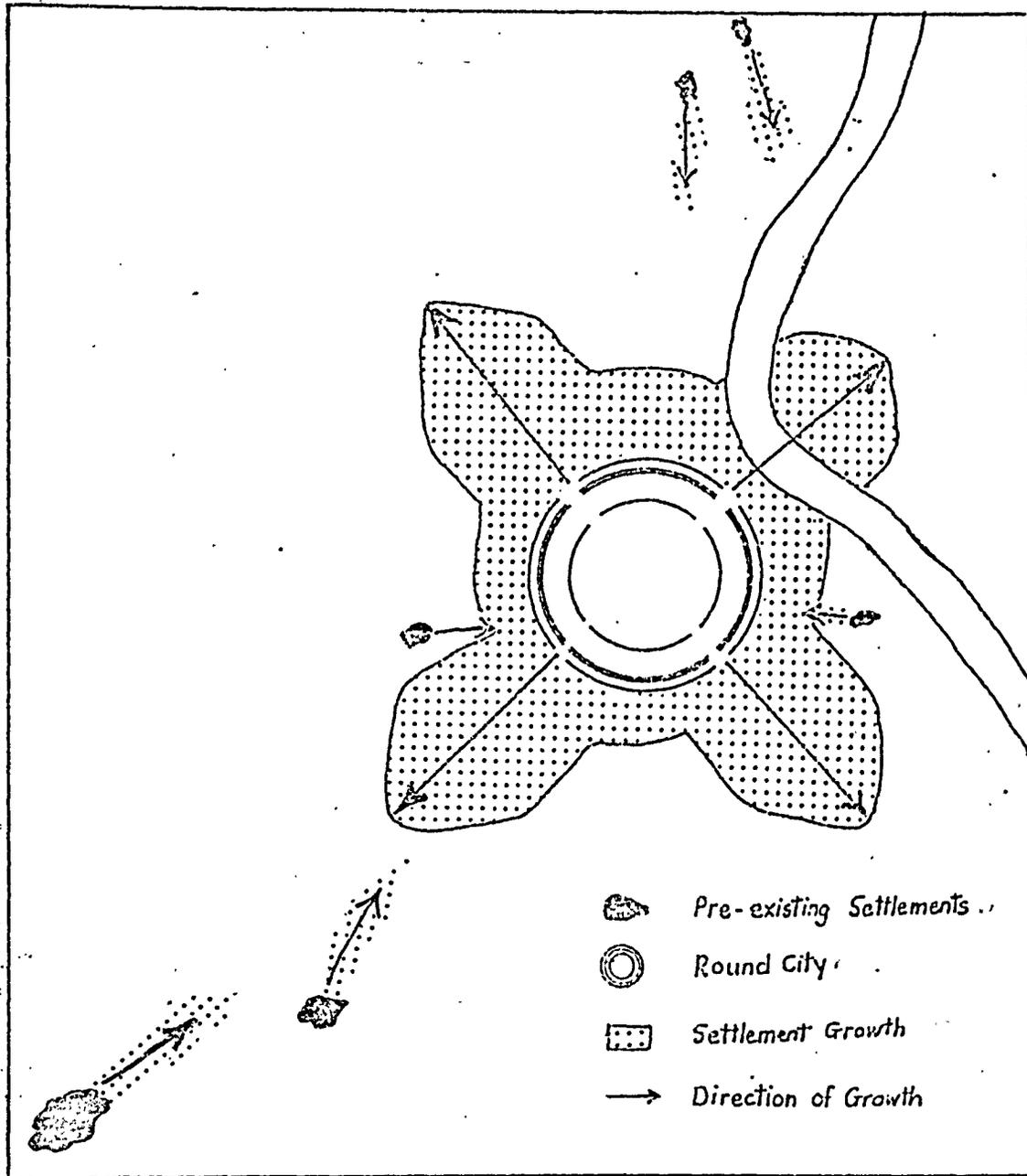
The Round City was so small, 5 - 8 sq. kms., and so peculiarly designed that its capacity for population was limited. In practice the population used to consist of those favoured by the court and of the employees of the court.

The points of the four gates were marked by squares used for army drilling, marketing and meeting places. These four points of the gates were theoretically the centres of semi-circular growth following the axes of the four roads.

That city was to burst under the force of the population growth owing to natural increase and migration. It is reported that the number of workers engaged in building al-Mudawwarah was 100,000,¹⁹ a figure very possibly exaggerated, assuming the development of a sizeable metropolis side by side the Round City itself. This is simply because such a figure and, as has been said, a further influx of migrants attracted by the opportunities of the new

* Agreement either about the area of the Round City or about the measurements of its components has not been reached.¹⁸

Fig. 5.5 A Schematic Growth Pattern of Early Baghdad (8th-9th Centuries)



capital, needs to be housed and serviced.

Secondly

As mentioned in Part II there were several pre-existing settlements in the Baghdad area, which now began to grow speedily towards the Round City. One can thus presume that the development around al-Mudawwarah went on simultaneously with its construction, though the explosion of the built-up area occurred only following its completion. It is conjectured that growth of the Round City proceeded in two directions, an inner centrifugal and an outer centripetal one. These two movements converged at the gates, and the circle was surrounded again by a wider development, marked by irregular built-up areas along the spoke-like crossroads running from the centre (Fig. 5.5). The first rapid expansion was along al-Kufah and al-Sham roads leading to al-Kufah the nearest big centre to the south and to Syria and the Mediterranean lands respectively.

5.5

Handwritten notes in Arabic script, including the word "مركز" (center) and "مناطق" (areas), with arrows pointing to the text.

Handwritten note in Arabic script: "الضواحي"

The new mahallahs that sprang up developed their own semi-independent life around their commercial centre, each being headed by its own shoikh, chosen along traditional tribal lines. This development of Baghdad took place without any municipal supervision. Accordingly, houses must have been built wherever their owners fancied it. Lack of space, together with necessities of climate and absence of good building materials, made for narrow streets and blind mud walls. Originally control over financial and military resources rested with the Caliph or his "Muhtasib"²⁰ (inspector). The latter was only concerned with maintaining the cleanliness of the bazaars and spying on the populace. Rapid expansion during the 8th century, however, was encouraged by the Caliphate as considerable holdings were distributed to certain tribes, officers and officials. Furthermore, the Caliph himself had

Handwritten note in Arabic script: "القبائل"

abandoned the Round City as a residence. He built the famous al-Khuld (paradise) Palace outside the Round City on the Tigris. This movement probably reflects al-Mansur's confidence in the power of his imperial army to keep order (Fig. 5.4).²¹

By 772, the bazaars of the Round City were ordered to move outside and marchants were expelled from the city for hygienic and security reasons, being replaced by policemen and guards.²² Al-Karkh, south west of the Round City, an ancient urban type settlement, had housed the new bazaars stretching between the Sarat and 'Isa canals;* laid out mainly along the caravan route to al-Kufah, still frequented by pilgrims to Mecca, contributing to the prosperity of the city. Consequently Al-Karkh grew rapidly, and became so important as to give its name to the whole of the West Side, a name which is still retained. At the present al-Karkh represents a high-ranking business centre in the commercial hierarchy of the city.

It is interesting to note that later on traders in various classes of goods segregated themselves into groups, so that all the slave traders, for example, were to be found occupying a single bazaar, apart from that of cotton sellers. The silk merchants were separated from the coppersmiths and so on.) Then, as now, it must have been difficult to buy a complete garment in the bazaar, for the cloth had to be bought in one section, trimming in another, needle and thread in another, and the whole had to be taken to the tailor to be made up.

Quick growth of the population and of economic activity, however, outstripped the capacity of al-Karkh and led to the expansion of Baghdad as a whole. The Round City became in fact a royal compound

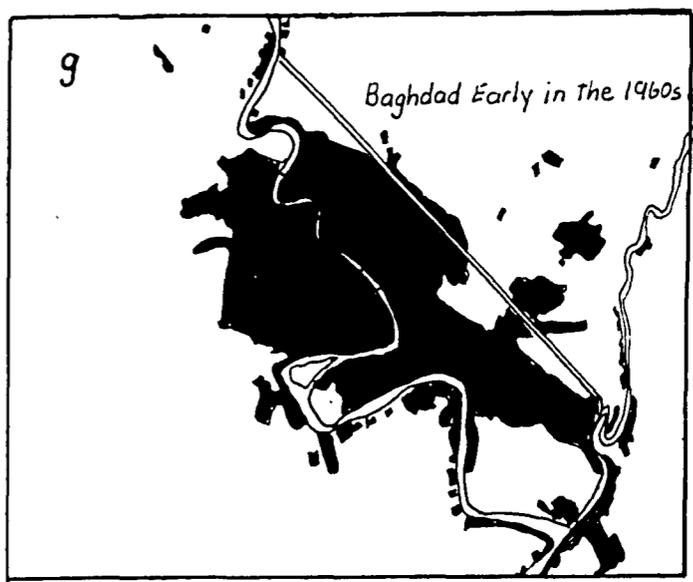
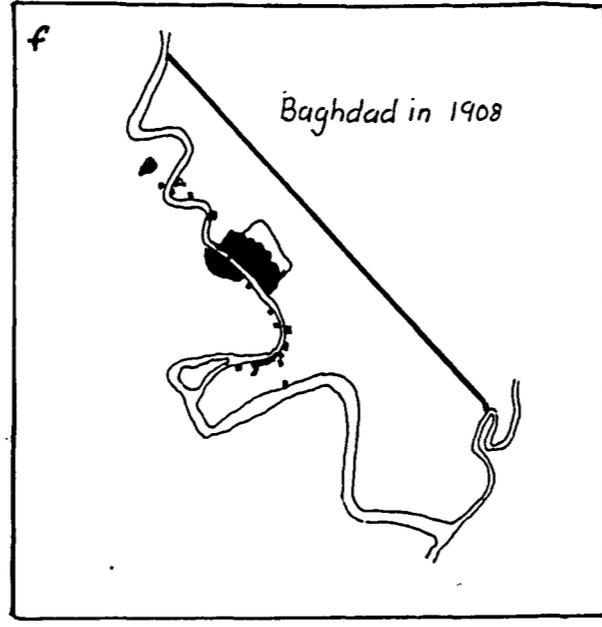
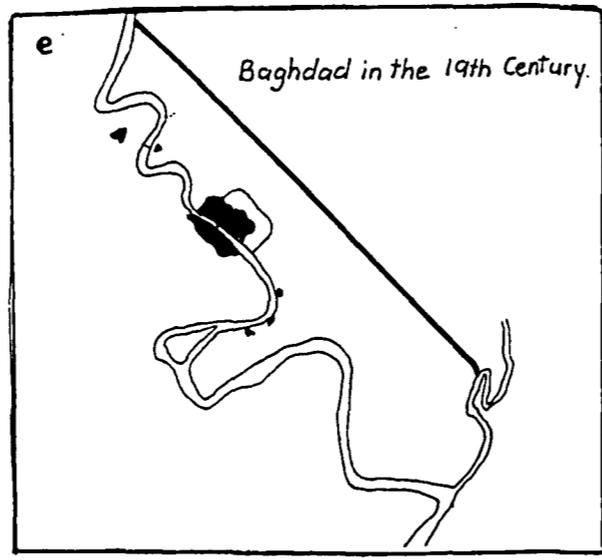
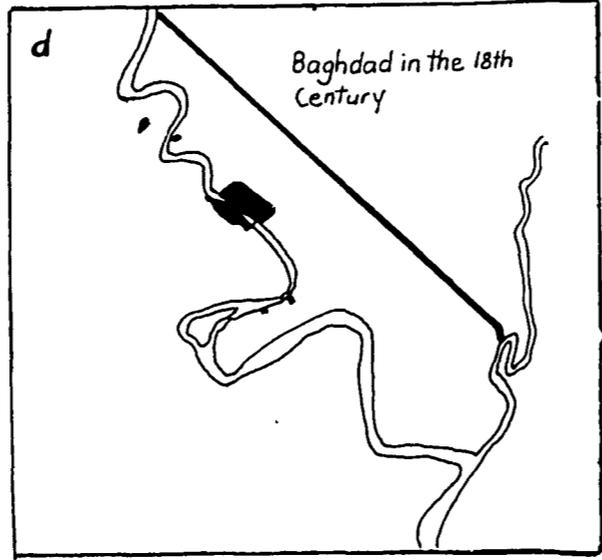
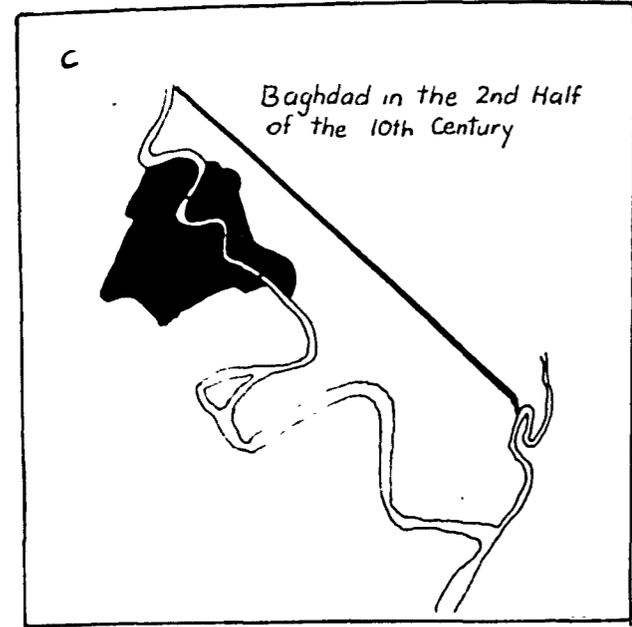
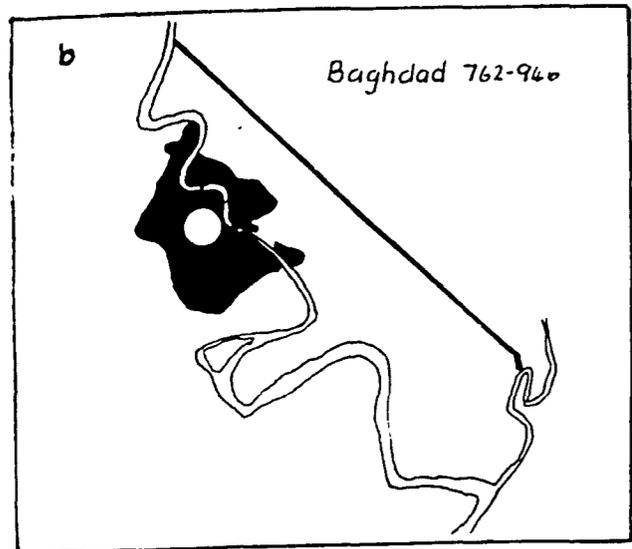
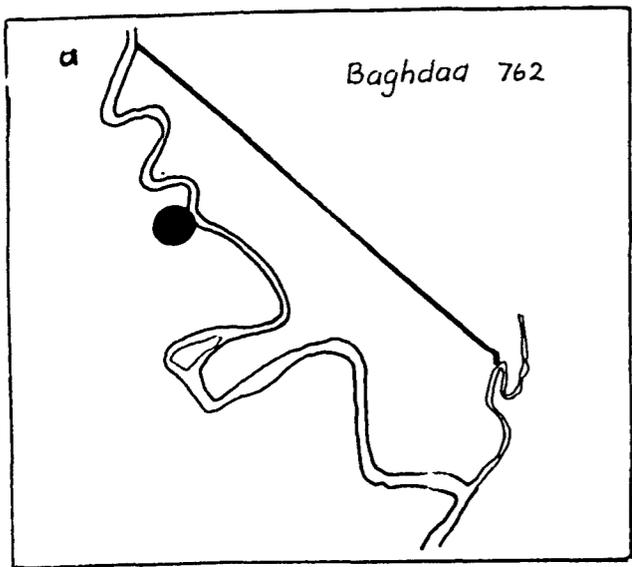
* These bazaars are said to have occupied an area of 2 x 1 Farsakhs (10 x 5 km²).²³

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Fig 5.6 The Growth of Baghdad



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- 142 ..

or suburb for the Arab Caliphs, their army and officials, within a much larger city, as Versailles to Paris or Westminster to London. Indeed, it had not been an ordinary city ever since its foundation. Inhabitants of the surrounding area were not allowed through the gates without permission.²⁴

Handwritten notes in the left margin, partially illegible.

Handwritten initials or mark on the right margin.

Expulsion of the bazaars led the Round City to be an exclusively administrative centre, the gate complex could be considered as an extension of the palace-area to which it led, as there was a caliphal audience hall (Majlis) surmounting each of the city's gates letting any visiting dignitary feel as if he was in the presence of the Caliph himself.²⁵ The Round City was lacking in places of entertainment such as hippodromes, gardens, theatres, etc. Furthermore, it was entirely cut off from the natural beauty of its surroundings by its fortifications.

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Almost contemporaneous with the Round City and the development on the West Side, al-Rusafah (causeway) settlement was developing on the East Bank of the Tigris, thus changing the town pattern completely and producing a rough pattern of two semi-circles of different size, with a pontoon bridge joining them together. The persistence of this pattern is well observed right through time from the 8th century to the present day, though it was already well defined during the 11th century (Fig. 5.6). The only deviation from it was the emergence of the twin settlements around the shrines of al-Zadhim the Shiah Imam and Abu-Haifah the Sunnah Imam, north of the Round City on the West Side and East Side respectively of the river. Expanding they have ultimately merged into present-day Greater Baghdad.

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The first constructions at al-Rusafah were the Friday Mosque and the Palace of al-Mahdi, the Caliph's son, near the Khurasan bridge-head, around which the residential mahallahs were developed. Originally, this side had developed to be barracks for the Persian section of the 'Abbasid army. The military purpose was evidenced by a wall and a ditch surrounding the Mahdi's camp. This shows how the caliphs turned their attention to the inner city itself. In addition to the precautions taken against external enemies others were taken against local uprisings. Owing to this Baghdad was separated into two distinctive sections, cut off from each other during the night when the pontoon bridge was raised.

Al-Rusafah, however, soon grew to engulf the centrally located camp of the Mahdi occupying the whole triangular area bounded on two sides by the great loop of the Tigris. To meet the needs of the fast-growing metropolis, two to five pontoon bridges were moored, all of which were similar to the bridges of pre-1939 Baghdad. Absence of wheeled traffic meant that a bridge could be moored at any point on the river, making use of the then existing zuqaqs. Consequently, bridges were repeatedly moved from their sites. The Khurasan road, the only straight road,* became the main business line flanked by a considerable number of shops.**

In 767 and 799²⁸ the Sunnah Imam, Abu-Hanifah, and the Shiah Imam Musa al-Kadhim*** were buried at al-Khaizuran and Qurash

* Clearly such a street must have been remarkable on a site where there could have been few influences from Hellenistic or Roman Town planning.²⁶

** The shops must have been considerable in number for in 905, 300 shops near the bridge were burnt at the same time.²⁷

*** The tomb of al-Kadhim has inscriptions recording the year 1215 (612) as the date of its latest restoration.

Handwritten notes in Arabic script, including a circled word at the top left and several lines of text on the left margin.

Handwritten mark resembling a cross or the letter 'k' on the left margin.

cemeteries, now the kernels of the religious surburban settlements of al-Adhamiyah and al-Kadhimiyyah respectively. These two shrines have high topographical importance since they are two of the few landmarks existing in present-day Kadhimiyyah and Adhamiyah dating from the time of the Round City. Together with several other tombs and shrines, they link the present Baghdad with its predecessor. They dominate the urban landscape of their settlements, offering themselves to the architect, geographer, engineer, artisan and the common citizen amidst their traditional surroundings, as an overall unique town pattern. The tomb of Sheikh Maruf al-Karkhi (d. 815)²⁹, a big cemetery being named after him on the West Side is another valuable landmark surviving in Baghdad. Until recently this cemetery was extramurally located, forming part of the inner fringe-belt of this side after 1956. (See chapter II)

Handwritten notes in the left margin: "with Adhamiyah" and "Adhamiyah".

The fringe-belt within which Sheikh Maruf cemetery emerged changed in size and intensification throughout the history of the city. Since then this cemetery was either expanding or recessing owing to the competition of other land uses, which were mostly of proximal extramural nature.*

golden age

Baghdad reached its zenith of intellectual activity and prosperity under the reign of Harun al-Rashid 786-809 (170 - 193) and his immediate successors.

Handwritten notes in the left margin: "700-800" and "Baghdad".

* It has been considered as a proximal extramural feature because it has developed outside, but in close contact with the fixation line of what became the Inner Fringe Belt of the city.³⁰

الشرق والجنوب

The East Side extended from al-Shammasiyah (Sulaykh of today) to the southern limits of al-Mukharrim (its southern limit perhaps is the modern Shuhada bridge). The West Side, on the other hand, expanded between Bab Katrabul on al-Tahiri trench in the north to 'Isa canal in the south (which can be traced in modern Baghdad, being terminated near Qamariyah Mosque at al-Karkh) and almost reached al-Muhawwal settlement to the south west (Fig. 5.4).

الشرق والجنوب

Baghdad became a great cultural centre producing writings, translations and original contributions. It also became the scientific capital of the world. It gained a rank next to Jerusalem, the religious capital, Athens, the philosophical capital, and Rome the legal one, each in their respective climax period. Baital-Hikmah (the house of wisdom) was a universally celebrated centre of knowledge, established by al-Rashid and developed by his successors. This centre had an academy, library, translation-bureau and observatory. The works of writers such as Pliny, Herodotus, Ptolemy and Sbrabo, were all translated into Arabic.³¹ Baghdad's contribution made a great impact in such important fields as philosophy, mystics, religion, literature, history, physics, chemistry, medicine and agriculture. Apart from the Mosques which were great centres of learning, Baghdad had tens of high schools and hundreds of primary schools.³² Presumably the form of these schools was similar to that of the surviving al-Mustansiriyah college, which will be described later on.³³

During this golden age of the Caliphate (762 - 946) friendly and literary communications were opened with almost all the then known world, and in some instances in a very remarkable manner.³⁴

Baghdad's advantageous position as shipping centre made all the known world accessible to it. It developed the most famous, well organized and specialized bazaars, handling a wide range of goods from all parts of the world.³⁵ Baghdad's wealth is indicated by the fact that a whole bazaar was devoted exclusively to the sale of Chinese silk.

To facilitate these commercial activities, Baghdad in this period became the headquarters of an elaborate banking system³⁶ with branches all over the empire which comprised 44 provinces.³⁷ It supplied the state with its coinage.

Baghdad had developed different kinds of craft industries numbered in hundreds,³⁸ and it was famous for its porcelain, glassware and attabi silk.

Tens of mahallahs were developed in Baghdad at the time. In al-Rusafah 37 qatiahs (mahallahs) were reported to be found, thus reflecting the increasing importance of the East Side.

The peaceful common life and penetration of Islamic principles encroached upon tribal solidarity and deprived it of its raison d'etre, but did not obliterate it completely. The tribal organisation was the basis of the social topography of the settlement. Each distinct group lived together in a certain mahallah named after it, and each member of each clan had the first option to buy his neighbour's allotment. Members of the clan shared equally in paying the blood money of any unpremeditated murder committed by any of them. They also inherited the property of any heirless member. They shared a common responsibility in preserving peace, security and order inside the clan.³⁹ These

social life
city unit
quarters
system

principles can be seen in several mahallahs of present Baghdad such as al-Hurriyah, al-Shulah, al-Thawrah and others in the traditional parts of the city. Even today most of the small towns of Iraq are topographically very much influenced by the kinship and tribal system.

Apart from the Royal and aristocratic palaces, which were built with burnt bricks, all the rest of the built-up area was of sun-dried (adobe) bricks.

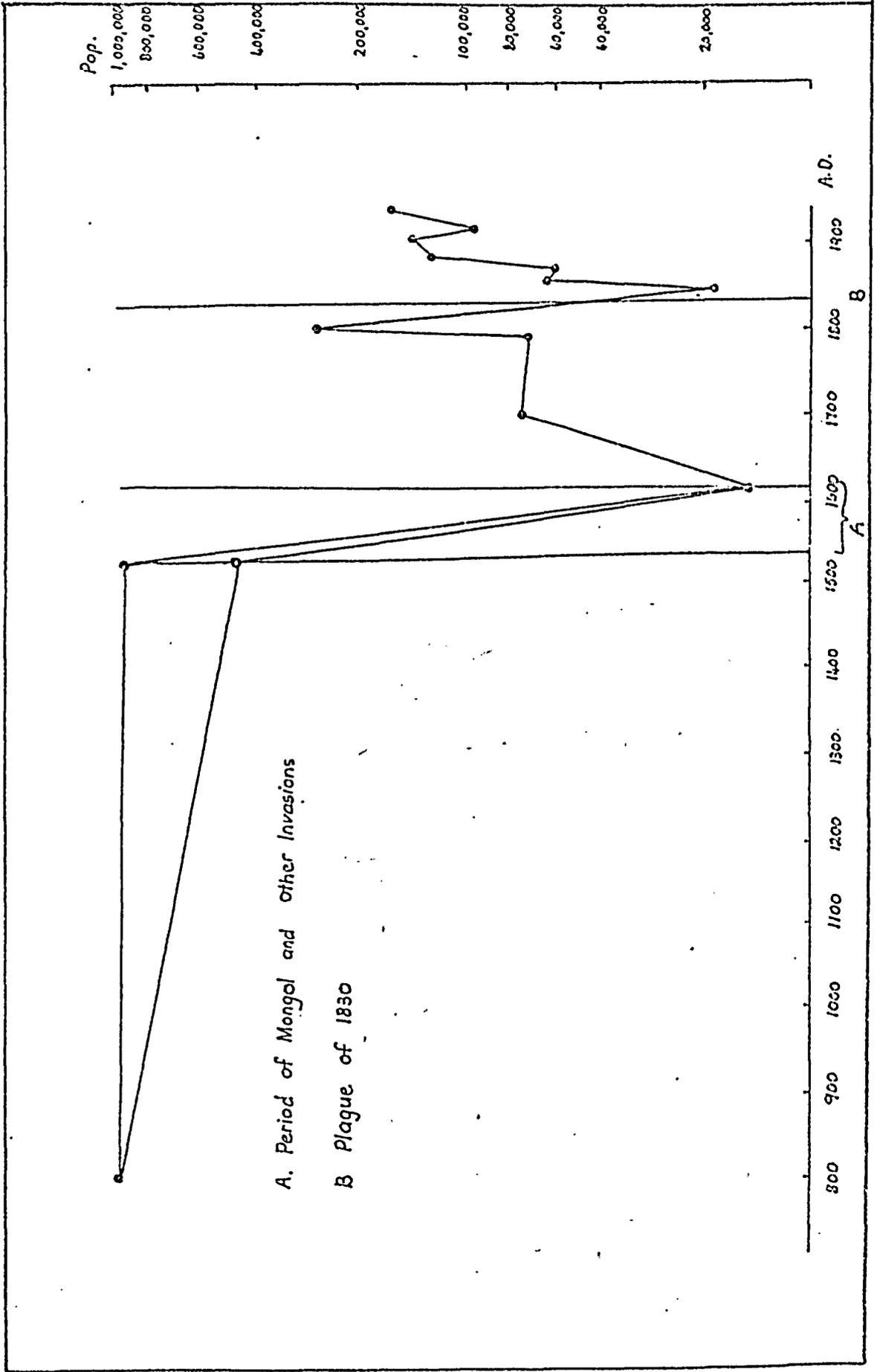
residential aspects

Abbasid houses were planned, shaped and arranged not very differently from the traditional house in modern Baghdad,⁴⁰ though the latter have been slightly modified. Houses were of one or two stories, depending on the economic position of the owner. High-class houses, mainly in al-Shammasiyah (north-west of al-Rusafah) and al-Mamuniyah (the later centre of the East Side), had baths and were divided into three sections, surrounded by a wall, the harim (women's part), reception part and the servants' section.⁴¹ From several different estimations Baghdad's area may be put at about 103,200 acres (43,000 greebs); 64,400 acres (27,000 greebs) were at the West Side and 62,400 acres (26,000 greebs) at the East Side,⁴² including cemeteries which were mainly peripherally located.

Baghdad did not have a census before 1947 and even this is X unreliable. Therefore, one has to be careful when examining figures about any aspect of the city.* The population of Baghdad has been variously estimated by historians and other writers as being between 500,000 - 2,000,000 or even more.⁴⁴ If one accepts the estimate

* Al-Khatib for example, like others who wrote about the period, had exaggerated when he put the number of hammams at 60,000, Mosques at 300,000, etc.⁴³

Fig. 5:7 Fluctuations of Baghdad's Population During the Period 800 A.D.



of one million for the population of earlier Abbasid Baghdad, and assumes the number of persons per family to be 5, there must have been 200,000 families. If one considers the average size of plot to be 200 sq. m per house taking into consideration associated spaces for horses, camels and cattle, also if one considers that 25 per cent of the total area inside the town was devoted to public buildings, streets and open spaces, then the gross area should have been $200,000 \times (200 + 50) = 50,000,000$ sq. m.

Baghdad has shown an alternation of two district developmental processes shown in (Fig. 5.7). The first type of process was one of decadent urban life, linked to conquest by foreigners from outside, in which the population diminished and the built-up area shrunk, many buildings being abandoned. The other brought a new spurt of building activities without order or rule, in which earlier alignments were not respected.⁴⁵

The first siege of Baghdad by the Persian troops of al-Mamun in 813(198) lasted for one year and resulted in the destruction of the West Side and the slaughter of many inhabitants, one of which was al-Amin, the Caliph.⁴⁶ From then on the seat of government shifted to the East Side until the nineteen-sixties, when the presidential and parliamentary buildings were built on the West Side which underwent a revival. Another physical change in the city of Baghdad following this siege was the construction of al-Tahiri Trench (al-Khandaq al-Tahiri)⁴⁷ on the West Side. This trench surrounded the Round City and the main mahallahs that survived the siege. It was spanned by several barrages carrying the main roads and attracting business sub-centres (Fig. 5.4).

For 56 years from 836 - 892 Samarra became the capital of the empire as al-Mustasim (833 - 842) tried to save himself from the

insurrection against his Turkish soldiers who misused their authority in Baghdad. When the Caliphs returned to Baghdad as a capital in 892, the city began to grow mainly on the East Side, though the West Side remained the main commercial centre, having major bazaars stretching from Bab al-Basrah (al-Basrah Gate) to Bab al-Kufah in the south-west.⁴⁸

Although removal of the capital function brought less disastrous consequences than might have been expected, it does represent a negative period in Baghdad's history. The acquisition of new functions and status leads to growth, but their removal may reduce the size, population and wealth of the town.⁴⁹

In this unstable period, Baghdad experienced a revolutionary change in its physiognomy. Caliph Al-Mustain 865/866 for defensive purposes had constructed his famous but short lived wall in 865. It was semi-circular in form, and shaped the topography of Baghdad for a time. On the West Side the wall stretched away from the southern bridge running west and south-west to turn to the north and north-east to meet the Tigris again north-east of al-Kadhim's tomb, engulfing the main mahallahs of this side. On the other bank, the wall enclosed the most important mahallahs of al-Rusafah i.e. al-Shammasiyah, the well-to-do locality, al-Rusafah and al-Mukharrim. These correspond to the present Adhamiyah, Waziriyah, Iwadhiyah and partly Sarrafiyah. Eventually the East Side developed a fan-shaped settlement, with Khurasan bridge-head as the centre. From this point two main streets, running north-south and east-west and subdividing the walled area into four unequal units, were flanked by shops, arcades and

حائز الدوله صدر
لغزاز

and khans (caravan serai).⁵⁰ Al-Mustain's Wall was planned to follow where possible the lines of existing canals which thus acted as moats. Where no convenient canal existed, a new moat was dug.

There were three pontoon bridges within the limits of this wall, the chief of which was Khurasan bridge which corresponds to al-Aimah bridge connecting the present Adhamiyah with Kadhimiyah. These walls had disappeared in the 10th century as a result of the second siege of the city, which lasted less than a year.⁵¹ On the East Side the three mahallahs had suffered such great damage that they were not put right until the 1950's.

Al-Mustain's walls (Fig. 5.4) on either side of the city lasted less than one century. These walls could be considered as fixation lines of the fringe belt. It should be noted that owing to the destruction following the second seige of the city, the fringe belt has been influenced considerably. These walls had no significance in the present physiognomy of the city, since both of them have disappeared completely.

In this period several bazaars and mahallahs developed along the roads starting from the six gates of al-Mustain's wall. The main bazaar was Suq al-Thalatha, running south from al-Thalatha gate along the road heading for Kilwatha settlement, (present-day Karradah al-Sharqiyah). Suq al-Thalatha which developed to become the business core of modern Baghdad has always maintained the greatest accessibility for the population of the country (Fig. 5.4).

The potential power and the magnificance of the Abbasid period were reflected in the galaxy of twenty-three palaces,⁵² most of which were surrounded by a wall, and the area was later known as the

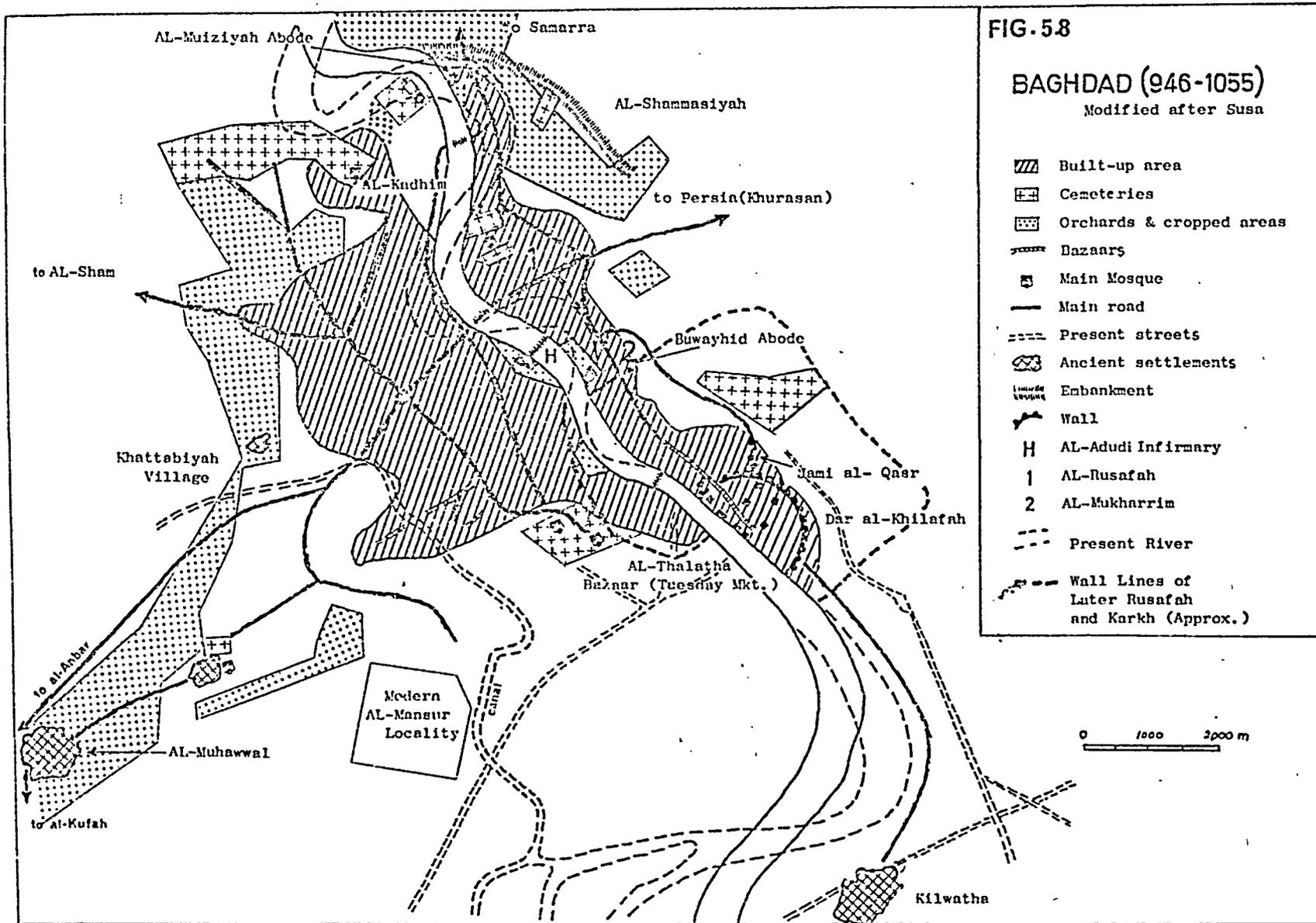
celebrated Dar al-Khilafah (The Abode of the Caliphate.)* Dar al-Khilafah is particularly important as it was the kernel around which modern Baghdad has grown. By 902-908, a great metropolitan Mosque was built within this royal colony, emphasising the importance of this central area. For a long time it was the official mosque,** being the third main mosque after al-Munsur's mosque in the Round City and al-Rusafah mosque at al-Rusafah in the East Side, (modern Adhamiyah). The minaret of the mosque of the Caliphs, was rebuilt more than once and is still standing in the business core of modern Baghdad. Together with a few late Abbasid palaces, khans, and mosques, it is all that remains of Abbasid Baghdad. Dar al-Khilafah and the surrounding development replaced the northern three mahallahs which fell rapidly into ruins. (Fig. 5.21).

During the period from 762 - 946 (145 - '34) the city of Baghdad did not experience any serious flood though the flood of 937 (324) had submerged four mahallahs, and resulted in the collapse of the dome of al-Mansur's palace in the Round City.⁵⁴ This was after the sophisticated irrigation systems had put the Tigris and Euphrates and their tributaries under full control.

* These palaces have been fully and repeatedly described in Arab poetry and historic sources, giving however, no details of their plans. Porcelain (some of which is to be found in the Berlin Museum) was manufactured in Baghdad at the time and used in such stately buildings.⁵³

** This mosque was known as Jami al-Qasr (the mosque of the palace), Jami al-Khilafah (the mosque of the Caliphate), Jami al-Khalifa (the mosque of the Caliphs) and recently rebuilt retaining the last name.

From the above analysis, one can summarise the main morphological elements in the city of Baghdad at this period. Firstly, there is ^{the} the administrative fortress represented by the Round City. Secondly we have the royal colony shown in the group of prominent buildings made up of Dar al-Khilafah and other scattered palaces, most of which were carefully sited. Thirdly, Baghdad has its own business core including the Grand Mosque of Jami al-Qasr, near which a bazaar network, schools, hammams and khans had developed. This area, together with the royal compound always attracted the well-to-do communities. This was so even in the inter-war period of our time. Fourthly, Baghdad had its great bulk of residential mahallahs. Their compactness was based on considerations of tribal security and perhaps on the initiative of the Caliphate to group the inhabitants on specific sites. Its purpose could be the ease of controlling uprising and of levying taxes through the appointed muhtasib. Fifthly, Baghdad had its own peripheral land uses, such as cometeries for Moslems, Jews and Christians. Sixthly, there was agricultural land stretching around the mesh of canals in the Baghdad region. The present pattern of Baghdad owes its existence to the late part of this period. The physical structure of the central bazaar of al-Thalatha has repeatedly changed. But the central situation itself has continued right through the unstable history of the city. It has been fixed by the existence of bridges and congregational mosques. For several centuries al-Khulafa mosque has continued to be the major mosque in the area. The whole layout of traditional Baghdad in subsequent periods has been influenced by this central location of grand mosques and bazaars. Religious and commercial functions continued to be performed successfully from this nucleus, as it had the best



F. P. 153

accessibility. Though the central bazaars of modern Baghdad have almost the same location yet the city in this early Abbasid period had not the same spatial layout of other functional centres. The fringe belt, together with its fixation line, intra and extra-mural units have been changed substantially.

b. Buwayhid Period* 946-1055 (334 - 447) (Fig. 5.8)

This period lasted for 109 years. Its importance in the development of Baghdad was owing to several social and physical factors. For the first time the sectarian problems began to play a role in the life of the city, and have continued to do so up to the present time. Mahallah concept, the major social and morphological element of traditional Baghdad, was well developed in this period, owing to the lack of security, tribal and sectarian factors. Physically, the city has shifted further to the South in this period, changing the whole pattern of Baghdad. Along with this the city began to shrink, a phenomenon which has characterised its evolution up to 1869. The major bazaars and mosques have maintained their central position around which the whole life evolved. Most of the public buildings of this period have disappeared. The fringe-belt remained in its incipient stage.

Population figures for Baghdad during the Buwayhid period are not available. An exact estimate cannot be made, but one can safely state that the population was considerably reduced. This

* Buwyh was a Persian Shiah in the service of the Sassanids. As his master's power weakened he established control over western Persia which his sons partitioned among themselves. One of them advanced against Baghdad in 945 (334) and was received by the Caliph who made him Commander of the Commanders.⁵⁵

was a direct consequence of floods, famines and the insecure state of affairs. In 944 Baghdad experienced severe famine, and many private and public buildings were allowed to fall into ruins. As a result of the neglect of the irrigation system, Baghdad was flooded in 978 and 1010 causing the destruction of several mahallahs. Both walls, that of the Round City and that of al-Mustain had collapsed.⁵⁶

Sectarian differences developed, being encouraged by the Bwayhids themselves. Conflicts between Shiahs and Sunnahs thus became common occurrences.⁵⁷ It is reported that in 971 conflagration on the West Side destroyed most mahallahs of al-Karkh. 17,000 people perished, hundreds of shops and houses were destroyed as well as 33 mosques.⁵⁸

The government was powerless and people were repeatedly terrorised. For example, the troubles of 1030 resulted in the destruction of many bazaars. Gangs repeatedly ransacked houses and shops and levied tolls from the inhabitants.⁵⁹ Accordingly, many merchants migrated either to Egypt or al-Sham.

Although the highway between Baghdad and Mecca was restored, maintaining its commercial advantages, the city lost most of its international commercial trade.⁶⁰ Several towns successfully rose to compete with Baghdad such as Fustat, Shiraz and Cordoba, all of which were showing their international pre-eminence. Furthermore, a considerable part of central Iraq was taken over by a newly founded Arab state some 105 km south of Baghdad. Hillah was built in this period to be the capital of al-Miziyadiyah state.⁶¹ This region had been previously part of the Abbasid Caliphate.

Physically Baghdad shrank, and several settlements became detached from the city, (Fig. 5.8). The inhabitants, searching for their own security grouped themselves in compactly built-up areas

بغداد
شمال
غرب

compared with the last period when the mighty city sprawled extensively.

Mahallahs began to develop independently. The city as a whole had expanded southward, being attracted by Dar al-Khilafah. The main physical change of the city was the construction of al-Muziyah palace at al-Shammasiyah on the Tigris.⁶² It was the residence of the Buvayhid Prince. A second famous building on the East Side, built at the time, was Dar al-Mamlakah al-Buwayhidyah (the Abode of the Kingdom). It was at al-Mukharrim mahallah (now al-Sarrafiyah), surrounded by large gardens. The third and most celebrated stately building was al-Bimarstan al-'Adudi* (al-'Adudi Infirmary) on the West Side, possibly replacing al-Khuld palace of al-Mansur to the east of the former Round City.

The physiognomy of the city was also influenced by the shrines of Abu Hanifah and al-Kadhim in the north on either side of the Tigris. All these buildings served as nuclei around which mahallahs and certain bazaars sprang.

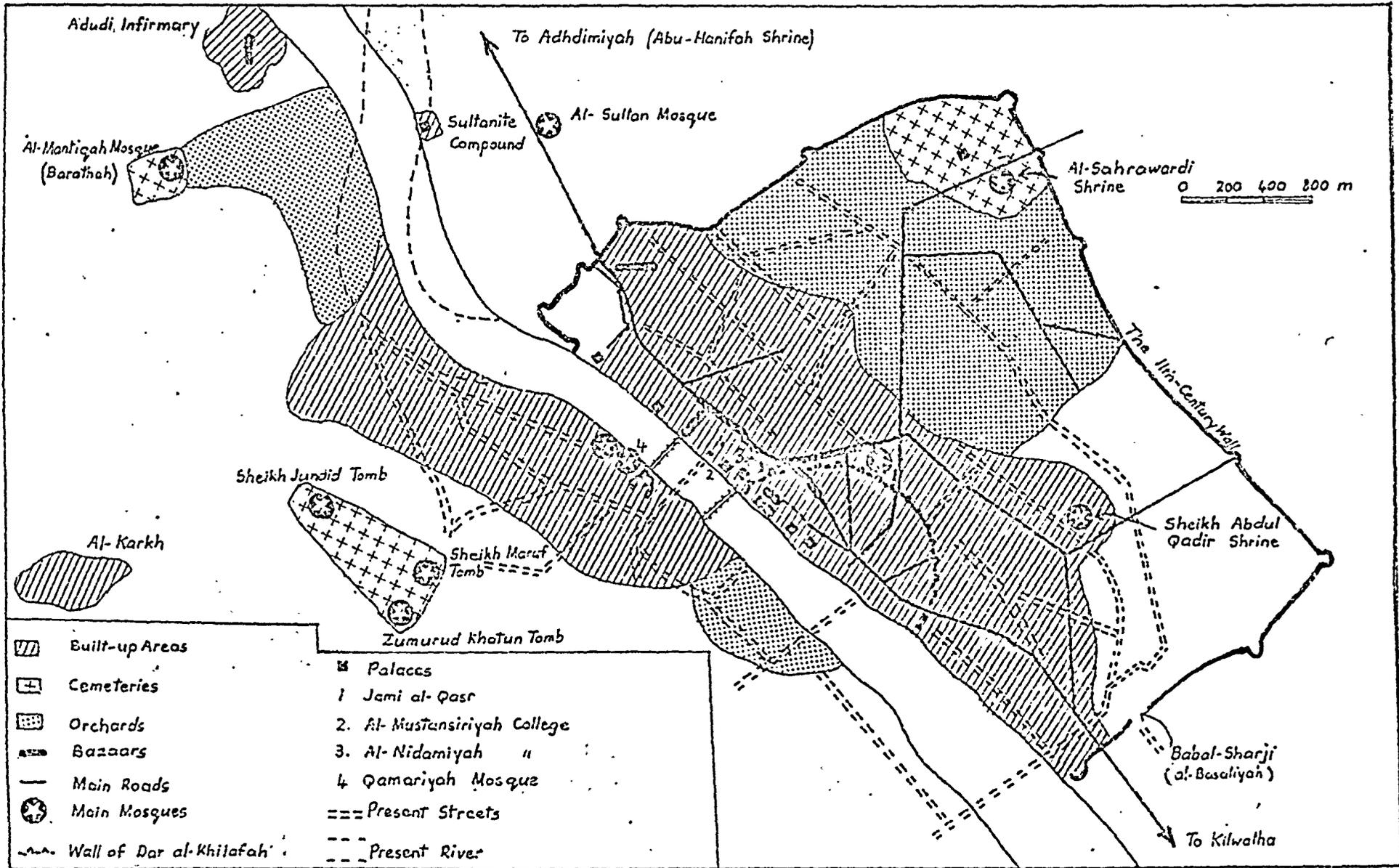
Ribbon development along the highway to Samarra between Abu Hanifah (Adhamiyah) and al-Muziyah palace to the north took place.

Adhamiyah and Kadhimiyah were physically detached from, but functionally incorporated with, greater Baghdad.

The commercial centres of the city were Dar al-Khilafah and its surroundings on the East Side and al-Karkh on the West Side. Dignitaries were attracted to the East Side around the seat of government. The main high-class communities were in the area around and south of Abu Hanifah Shrine, especially near the bridge-head, where they are known as Bab al-Ta'q (The Gate of the Arcade), and Dar al-Khilafah and around Suq al-Thalatha.

* Certain manuscripts from the Infirmary can be seen in the British Museum.

Fig. 5.9 Baghdad, 1055-1258. (Modified After Susa)



F.P.S

The cemeteries of the town became "distal extramural"* zones, compared with their intramural or proximal extra mural locations in the previous period. The ancient settlements - such as Kilwatha, al-Muhawwal and Khatabiyah drew further away from the built-up area.

The semicircular pattern of the city began to show an elongated fashion of growth alongside the Tigris, which can be traced up to the present day.

c. The Seljuk Period** 1055 - 1152 (447 - 547): (Fig. 5.9)

The morphological importance of this period (97 years) is ever present. The eventual pattern of traditional Baghdad took its final shape in this period. One of its most important lineaments is represented by the wall of al-Rusafah within which the city began to evolve up to the 1920's. In this period Baghdad's fringe-belt, the Inner Fringe Belt of the present time, experienced intramural development on the East Side within the wall as its fixation line and extramural shrinking on the West Side which was reducing its size. The tempo of physical reduction of the city increased. This was owing to human and natural factors represented by wars, sectarian frictions and floods.

As Bwayhid rule had gradually weakened, Seljuks, the Turks under Tughril Beg took over Baghdad in 1055 (447). Sectarian

* This term has been used here to indicate the dispersed and discontinuous zone of the then Baghdad extramural area, having tenuous connection with the fixation line.⁶³

** Seljuks were fierce tribes moving from Turkestan who adopted Sunnah Islam in or around Bukhara, swarmed over Persia and Iraq, spilled over Syria and finally overran Asia minor.

factions continued in this period to have a negative effect on the development of the city. Consequently, inhabitants grouped themselves in certain mahallahs along sectarian or tribal lines. Differences erupted into repeated open conflict during the long Ottoman occupation, which left its mark on the whole pattern of the city.

Danger of flooding had increased in the 12th century, as a result of the collapse of the dams of al-'Udhaim river and Namrud* on the Tigris. Apart from this natural threat, the city was twice under siege, by Seljuks who tried to replace unwanted caliphs (in 1136 and 1148). As a result of all these disturbances the physiognomy of the city began to change extensively. The older three mahallahs of al-Shammasiyah, most of al-Rusafah, al-Mukharrim with their surrounding wall of al-Mustain were razed to the ground.

As the Caliphate tottered, manipulated by inadequate governments, the inhabitants sought protection behind a new wall constructed between 1095 - 1123 during the reign of the Caliph al-Mastarshid.⁶⁴ The wall enclosed the traditional East Side of Baghdad and was described by almost all the writers who travelled through the city, (Fig. 5.9). Although it was built mainly for military reasons, it was always used against floods, a function reflected in its recent name, saddat al-Madinah (the dyke of the city).

Apart from the southern and North-western parts of the wall now replaced by new streets, roundabouts and gardens, the whole north-eastern stretch of the wall has been traced by the writer as the clear fixation line of an inner fringe belt on the evolution of the present city plan.

* An ancient, perhaps Sassanid, dam, built on the Tigris near Samarra.

Fig. 5.10



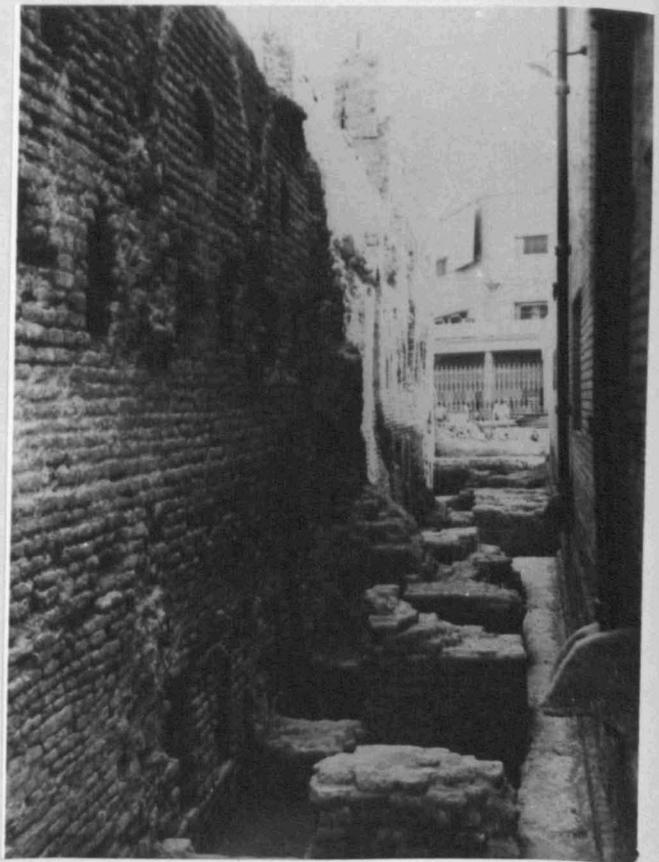
c. Bab al-Sharji (Bab al-Basaliyah) destroyed in 1936/37



Photo 5.—The Bab al Wastani, or Middle Gate. Only a small fragment of the second round bastion has survived, to the left of the gateways.



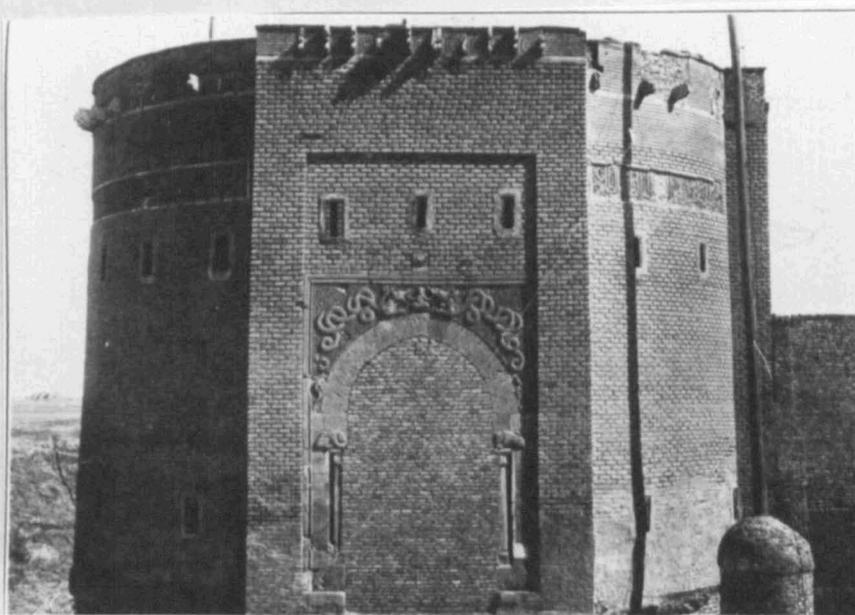
Photo 6.—The Eastern Bund, looking south from near the north-eastern corner of the Old City. The Bund is to the left, and its course is shown by the line of pylons. The depression to the right (west) is the old moat, now occupied by the matting huts of poorer folk. The steep slope immediately beyond corresponds with the line of the old wall, against which the accumulations of the Muslim cemetery were piled from the inside.



d. Bab al-Wastani and the Eastern Dyke (after Lebon)

e. Rusafah's medieval wall at Bab al-Mudham

Fig. 5.10



a. Bab al-Tullissim (Bab al-Halabah) destroyed in 1917



b. Bab al-Mudham (Bab al-Sultan) with the British troops entering Baghdad in 1917. The gate was destroyed in 1925.

[Faint, illegible text, likely bleed-through from the reverse side of the page]

This wall is also documented in all the pictorial representations and plans of the city, which will be analysed presently. The wall continued to function efficiently for about eight centuries. It was demolished between 1869 - 1871 by Midhat Pasha to 'modernize' Baghdad. The fate of its four gates were as follows: Al-Tullissim gate (historically known as al-Halabah or Hippodrome Gate) in the east was bombed by the retreating Ottoman troops in 1917; Bab al-Sultan (recently Bab al-Mudham) was demolished in 1925 to provide a main sahad (square) from which roads lead to the university buildings and the northern suburban areas; Bab al-Basaliyah (recently Bab al-Sharji) was pulled down in 1937 by Amanat al-Asimah being replaced by al-Tahrir, the most famous square of modern Baghdad. The fourth Gate of al-Dhafariyah or Bab al-Wastani is the only surviving gate structure of this medieval wall (Figs. 5.3, 5.10a, b, c, d.). Today this wall or its remains separates the traditional Rusafah with its distinct courtyard houses and alley-street system, from the suburbs that mushroomed during the fifth morphological phase of Baghdad starting in 1956. The wall is 11 m wide, surrounded by a deep dry ditch starting from, and ending in the Tigris. It enclosed almost all the built-up area of the time including the Dar- al-Khilafah, the walled royal complex. From this central area, the main bazaar streets have commenced. The most important ones ran parallel to the Tigris almost from the bridgehead and entered Dar al-Khilafah. This is very possibly the existing al-Nahr Street which was widened early in the 20th century. Around the northern pontoon bridge and ⁱⁿ both sides, the main bazaars, khans and coffee-houses developed, ⁶⁵ to become a thriving part of the present business core. The bridge was

moored early in the 12th century close to the site of the modern al-Shuhada Bridge. It has persisted almost continuously until its replacement by the permanent modern bridge in 1941. This means that the overall spatial distribution of the functional areas of traditional Baghdad goes back to that period.

The new walled Rusafah completely replaced the ruined northern mahallahs around Adhamiyah. As they were causally related, the replacement of the northern mahallahs by the walled Rusafah can be considered as "morphological correlative" similar to that observed in the English town of Alnwick.⁶⁶ It was very likely that the inhabitants of the northern mahallahs had moved to the new walled area after which present Rusafah has developed.

Although the city as a whole had shrunk in this period, al-Rusafah continued as the side favoured by the nobility being thus the most populous side.

Baghdad, however, experienced tentative and limited physical additions. Having some interest in religious buildings, the Seljuk Sultans built the minarets of al-Kadhim which have a historical, architectural and morphological significance in the townscape of Baghdad.⁶⁷ Al-Nidhamiyah College was the outstanding development in this period, built in 1065 (457).⁶⁸ It is located on Suq al-Thalatha, which is now suq al-Khaffafin in the heart of the business core of modern Baghdad. Le Strange plotted this college about one km south of its real site.⁶⁹ Ibn Battutah, when travelling through Baghdad in 1327 (737) was astonished by the college which contributed to the educational significance of the city. Levy says "the influence of the school (al-Nidhamiyah)

stretched beyond the limits of Baghdad. Indeed some of the details of its organization appear to have been copied by the early universities in Europe. It was recognized by the religion of Islam and by the state." ⁷⁰ Several other schools were also built in this period, all of which have been replaced by new constructions. For example, the Seljuk school of al-Muwafaqiyah is now replaced by the present Qishlah and al-Tutchiyah is now Jami al-Wazir (the mosque of the Vazir).⁷¹

The West Side in this period was reduced in size, being closer to the Tigris and therefore surrounded by vast areas of debris. The fringe-belt of the West Side became more detached from the built-up area. However, a few public buildings such as mosques, schools or khans were occasionally constructed on either side of the river. Most of the buildings of this period have disappeared as the city developed in subsequent periods. On the East Side the new wall began to act as the major morphological element of the city. It continued to mark the distinct fixation line of the fringe belt which stagnated extramurally, while evolving further intramurally. Owing to the decrease in population and the reduction of the built-up area, the extramural section of the city became vacant desert land. Perhaps more than half of the walled area was occupied by intramural fringe-belt land uses mainly cemeteries, orchards and vacant land. From this time until the 1940's the intramural development absorbed the city's early modern expansion.

For the first time Baghdad contained detached fragments of urban settlement, considerably apart from each other but interrelated and mutually dependent in their functions. The main settlements clustered around Abu-Hanifah in Adhamiyah (the Old Rusafah) around

Kadhim in Kadhimiyyah opposite to Adhamiyah, around al-'Adudi Infirmary and a small development around Dar al-Mamlakah al-Seljukiyah (or Sultanid Compounds). This last was similar to the previously mentioned Buwayhid residence in the last period, which was located to the north of Bab al-Sultan, close to the existing rail/road bridge at al-Sarrafiyah. It is reported that a bazaar and khans developed in this period.

d. The Last Abbasid Period: 1152 - 1258 (547-656)

The 106 years of this period stamped the morphological structure of present Baghdad. Several shrines emerged, being nuclei around which more development took place. These still surviving land marks are very important in tracing the physical layout of the city. Generally, the city declined in this period with no essential fringe/belt development.

The period was characterised by the prevailing disorder internally, whereas externally the empire was threatened by two strong enemies, the Crusaders from Europe and the Mongols from the East. Early in the period almost all the subsidiary irrigation canals in the area of Baghdad silted up.⁷² The city thus flooded nine times in this period, the worst of which were the floods of 1217 (614), 1243 (641) and 1256 (655), throwing many of the mahallahs and constructions into ruins.⁷³

The city maintained its fragmentary growth pattern. Apart from the twin halves of the city, Rusafah and Karkh, Baghdad had other scattered urban areas around Abu-Hanifah in Adhamiyah, al-Kadhim at Kadhimiyyah, which was some 1,000 yards from the Tigris,⁷⁴ al-'Adudi Hospital and around the Sultan mosque. Al-Muhawwal was still a considerable village to the south-west of Baghdad, but

debris instead of gardens lay in the intervening space (Figs. 5.8, 5.9)

According to the description by Ibn Jubair, the Arab Geographer visiting Baghdad in 1184,⁷⁵ the city was in ruins. Nevertheless, he found 17 mahallahs on the West Side each of which had its own hammams and mosques. One of the famous mahallahs on the East Side was al-Qrayah, which is very likely the same as the present mahallah of Ras al-Qrayah between al-Ahrar Bridge and al-Shurjah. All the tombs and shrines of Abu Hanifah Sheikh Maruf, al-Karkhin, Zummurud Khatun* and al-Kadhim were mentioned by him. The description of the walls of Baghdad left by Ibn Jubair, is identical to that of late nineteenth-century Baghdad.

According to Ibn Jubair, Baghdad had many mosques, the most famous of which were the extramural Friday mosques of al-Sultan connected to the Sultanid palaces, al-Ruafah mosque at Adhamiyah one mile north of the latter, and al-Khilafah central mosque, which is now Jami al-Khulafa in al-Shurjah area (Figs. 5.9).

In his geographical dictionary, Yakut stated that by 1226 there was considerable waste land within the built-up area of Baghdad, particularly at al-Karkh.⁷⁶ The area between Adhamiyah and Rusafah on the East Side was in ruins. For security reasons several mahallahs had protected themselves with walls, like independent townships in the midst of the waste.

The hub of the socio-economic activities of the city continued to be at Dar al-Khilafah,⁷⁷ the walled royal complex which then occupied about a quarter of the East Side, and the nearby bazaars. The main bazaar was Suq al-Thalatha, running from Dar al-Khilafah towards Bab al-Sultan in a northerly direction. The only two

* Zummurud Khatun was the wife of the Caliph al-Mustadhi who died in 1202 (599).

pontoon bridges of the city mentioned by Ibn Jubair, were located at the north and south ends of this bazaar, reflecting the importance of this central area. In 1243, 26 shops, a coffee house, bakery, mosque and khan were built near the northern bridgehead.⁷⁸

All these developments increased the importance of this central area as a major functional and morphological nucleus of traditional and modern Baghdad.

The street system has been changed, essentially influenced by the gates of Dar al-Khilafah and of the city wall, the business and religious centres of the city. In this period perhaps some of the major zuqaq lines developed their final layout. This influenced the spatial distribution of land uses in the following periods, until the city adopted vehicular traffic, late in the 19th century.

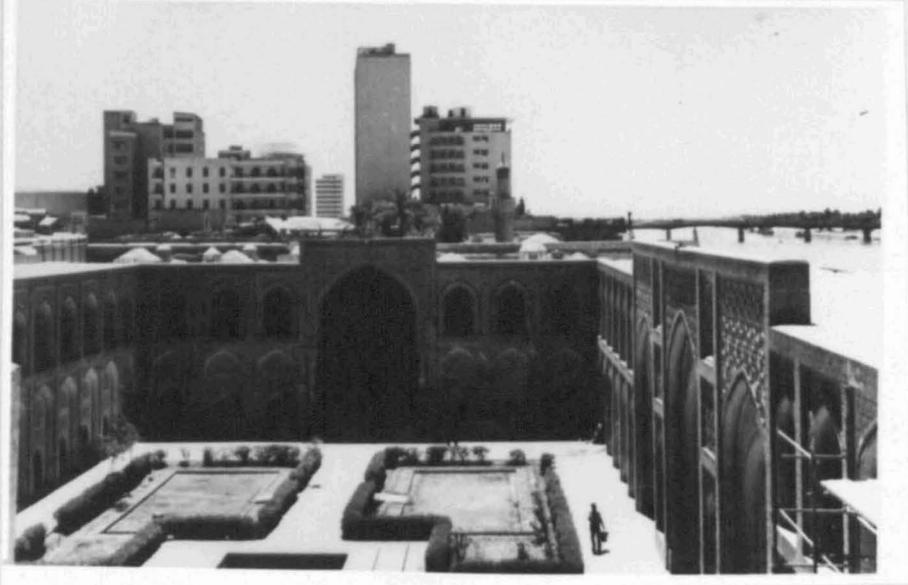
According to Yakut the main road was al-'Adham Street, the continuation of al-Thalatha Bazaar, leading to Adhamiyah. He found that the East Side was more populated, housing almost all the 30 schools, offices and palaces.

Although most of the historical buildings had disappeared, several new monumental buildings were built, contributing to the religious and cultural importance of the city. Among these edifices still existing as main landmarks in the physiognomy of Baghdad are the mosque of al-Qamariyah besides the modern al-Karkh secondary school. It was built 1135-1176.⁷⁹ In 1165

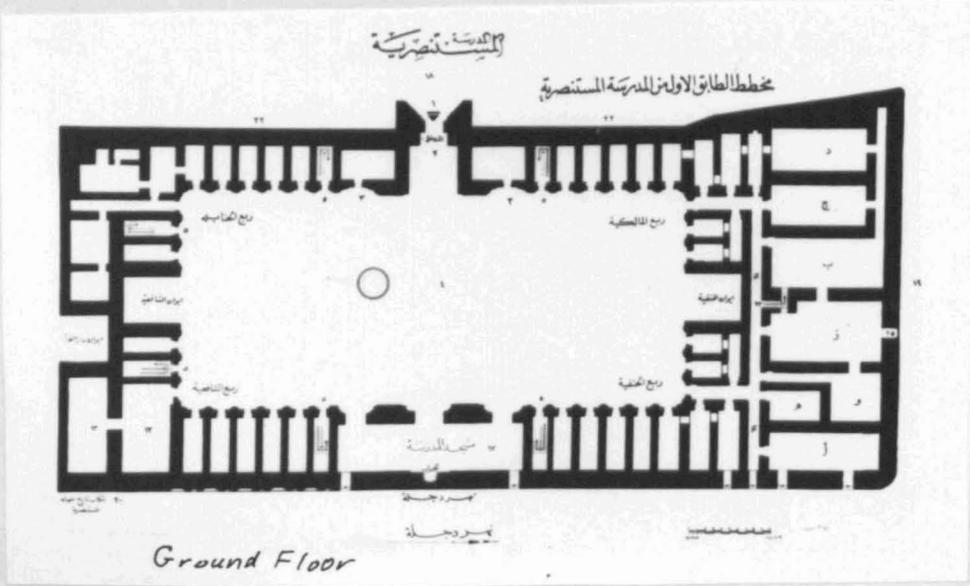
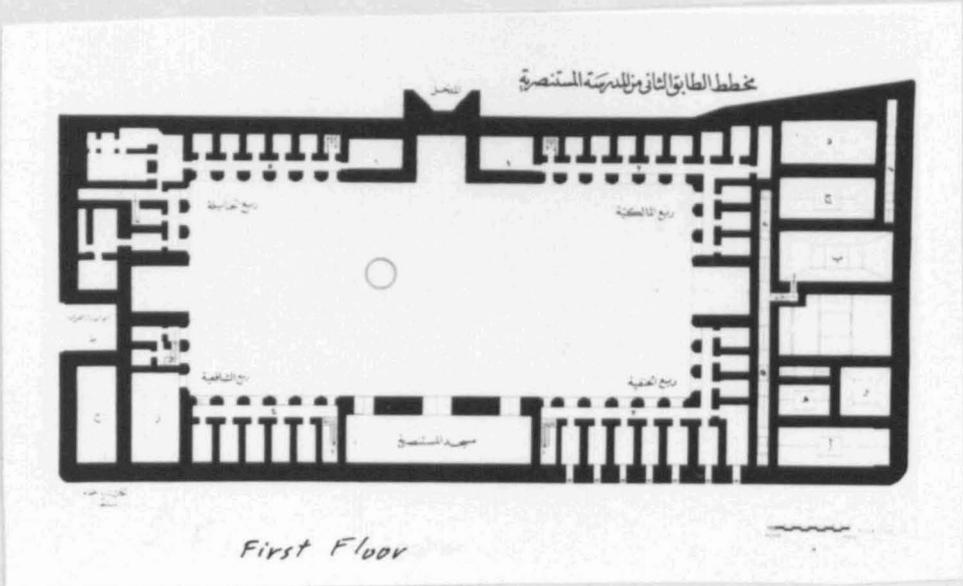
Sheikh Abdul Qadir al-Qailani, a sufi leader died. Soon his tomb became a shrine, with a spacious Metropolitan Mosque. A new mahallah, named after him, Bab al-Sheikh developed, sprawling eastward and absorbing the surrounding gardens.

The death of Abdul Qadir has reinforced the religious significance of Baghdad, his shrine is visited annually by a

Fig. 5.13

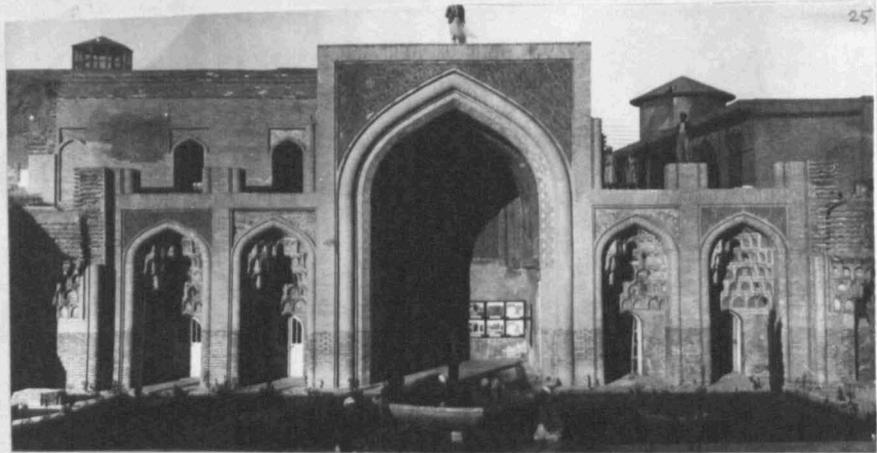


a. Al-Mustansiriyah College looking south-east



b. Plan of al-Mustansiriyah College

Fig. 5.12

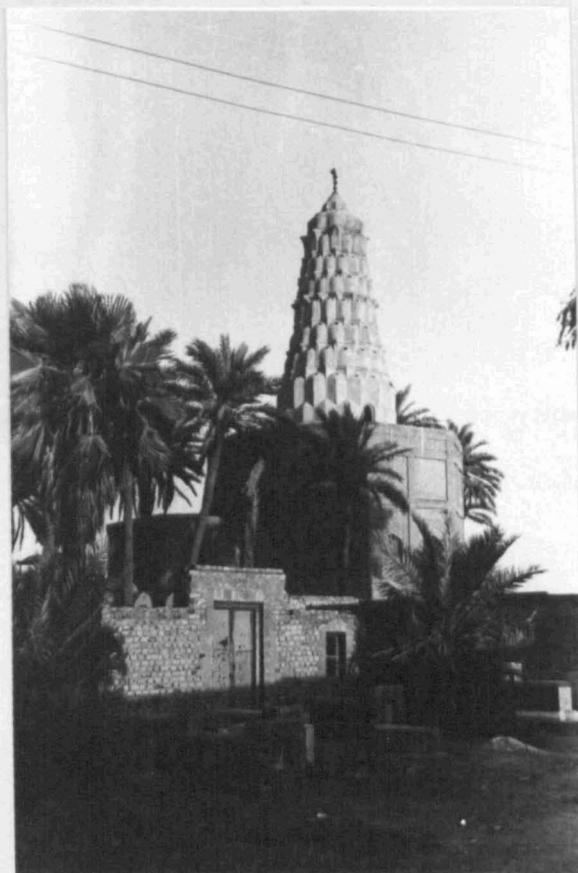


a. Interior of the Abbasid Palace

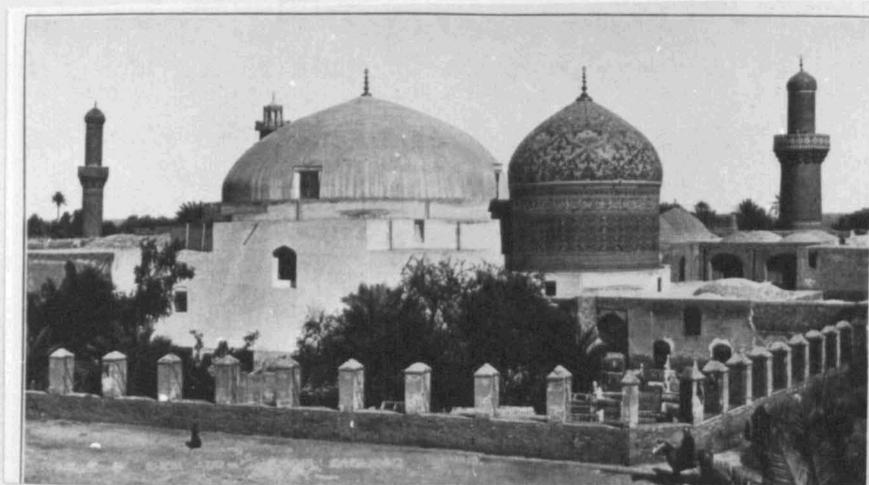


b. The minaret of al-Khulafa Mosque
(Suq al-Ghazil minaret)

Fig. 5.11



a. Al-Sahrawardi Tomb



b. Sheikh Abdul Qadir al-Qailani Shrine

considerable number of pilgrims from all over the Islamic world.
(Figs. 5.9, 5.11)

Sheikh 'Omar al-Sahrawardi, the pupil of Sheikh Abdul Qadir died between 1165 - 1170.⁸⁰ Thereafter al-Sahrawardi shrine, a pineapple-shaped erection, appeared as a principal architectural feature on the East Side (Fig. 5.11). It is now surrounded by a working-class locality. Bricks were used efficiently in most of the 'Abbasid main structures, as can be seen in preserved mosques and shrines. The stalactite motifs and other decorations were not mere tiling, they reflected the integration of the construction elements giving it an independent pattern and design. The Abbasid palace, a part of which stands south of the Ministry of Defence, was built in this period at 1179 - 1225,⁸¹ representing another Abbasid landmark in the townscape of modern Baghdad. This palace was badly abused during the Mongol and the following periods (Fig. 5.12a).

The year 1233⁸² witnessed an impressive architectural construction, when al-Mustansiriyah, still existing, was constructed.⁸² It was built in the main commercial centre of Suq al-Thalatha. Quran theology, languages, literature, medicine and mathematics were taught in this college. Thus it could be considered as the oldest university in the world, on the grounds of the variety of subjects taught in it (Fig. 5.13a,b).

Khans, shops and coffee houses were endowed to al-Mustansiriyah, some of which still exist. As it stands today the college is approximately rectangular in shape.* The courtyard gives the building enough light. In the plan of this building its iwans

* Its length is 104.80 m, its width between 44.20 m in the north and 48.80 in the south covering an area of 4,836 sq. m.

(portices), lodgings, bays, classrooms, halls and other sections are all around the four sides forming a frame to a large oblong open courtyard situated in the centre. The roofed area contained the necessary sections of the college such as classrooms, assembly halls, lodging for students and masters, dining rooms, a library, store rooms, kitchen, dispensary, bath, a hospital and a clock. Its monumental gates express the advancement in building technique and decoration. The water reservoir is situated in the middle of the courtyard. Other buildings were connected to al-Mustansiriyah such as the famous Dar al-Quarn and Dar al-Hadith where the holy Quran and traditions were taught. There have now been substituted by a modern bazaar and the mosque of al-Asifiyah. Al-Mustansiriyah distinguished itself by being the first centre for teaching simultaneously the four muslim law schools representing the four orthodox sects.* It was divided into four quarters each of which was assigned to one of the four sects.⁸³ This building could be considered the best architectural document for the study of Abbasid architecture. The relation of the design of Abbasid buildings to the climate of Baghdad can be understood from the plan of this school, recurring as it does in the plans of houses and other constructions. Riwaqs (cloisters) and internal dihlizes (corridors) co-ordinated to achieve the required ventilation. Certain roof openings maintain maximum light but with minimum direct insolation.

*: There are four varieties of orthodox traditions in Islam, each of the schools, the Shafi, Hanafi, Maliki, and Hanbali, named after the founders, differing in details of practice, but by and large holding similar Islamic beliefs and principles.

Al-Mustansiriyah and its surroundings represent one of the oldest existing building fabrics of Baghdad. Its erection in this site emphasized the importance of the central bazaars and stabilized the traditional layout of the city.

This short period of peaceful life was put to an end when in 1255 a sectarian fight took place between Shiahhs and Sunnahs, who lived at al-Karkh and al-Rusafah respectively.

The situation in Baghdad was very serious, becoming even more so in 1256 when, owing to heavy floods, many shops and houses were destroyed. This was followed by another serious riot breaking out at Baghdad between Sunnahs and Shiahhs which led to great plundering and destruction of property.

Two years later in 10th February, Baghdad was terrorised by the Mongol invasion under Hulagu. The siege lasted 50 days, during which the walls were severely battered, after which Baghdad surrendered unconditionally. The Mongols entered after the destruction of the 'Ajmi tower in the south-east of Baghdad's wall. They completely sacked the city, destroying priceless manuscripts and works of art. Theirs were the most horrible acts of vandalism. They carried off Baghdad's treasures and utterly wrecked the whole system of irrigation which had been the work of three hundred generations, thus obliterating the civilization of the country for six centuries, and the most prosperous country in the world became a desert. In practice Iraq even today has not fully recovered from the deterioration and corruption which arose and became rampant during the Mongolian occupation.

المغول

The inhabitants of Baghdad were indiscriminately put to the sword for about 40 days.⁸⁴ Estimates of the number slaughtered vary between 80,000 to 2,000,000, the estimate mounting with the lapse of time.⁸⁵ Most of these figures are too high to be acceptable although temporary migration to Baghdad from surrounding areas had raised its population.

The last Abbasid Caliph was taken prisoner and killed thus ending Arab rule in Mesopotamia. Since then Baghdad has never again risen above the status of a provincial city until the emergence of Iraq as an independent state in 1921.⁸⁶

e. The Elkhanid Period: 1258 - 1338 (656 - 738)

This period lasted for 80 years. Socially, the sectarian disputes increased. This has been reflected in the clustering of Sunnahs around Abu-Hanifah and Shiahhs around al-Kadhim, and also by the reinforcement of the mahallah concept. Physically, most of the Abbasid built-up area outside the wall on the East Side disappeared, owing to the lack of security and the decrease in population.

The traditional commercial centre was stabilized, while there was no essential development along the stationary fringe-belt. The main references of this period are the works of Ibn Battutah (1327) and al-Mustawfi the Persian (1330).⁸⁷

The Mongols established Tabriz as their administrative capital after ending the Caliphate. Tabriz became the greatest east-west centre of its time, replacing the declining city of Baghdad,⁸⁸ which was administered by an Elkhanid ruler with a military garrison at his command. From then on until 1921 Baghdad has never known

a really prolonged period of peace for strategic reasons. It has been repeatedly attacked because of its strategic importance. The rule of Mongols and other invaders widened still further the gulf that separated the governors and governed. Because the inhabitants had to protect themselves against internal uprisings, they developed the traditional inward-looking houses and mahallah structure. Small sects or clans grouped themselves into certain mahalls which looked like towns within a town. In the face of the arbitrary power of the governor, from which nothing protected them, the inhabitants concealed their private life and that of their families, as far as possible, behind the forbidding walls of their houses in the maze of suqaqs and back alleys which half sealed off their residential district.⁸⁹

Co-ordinated effort was lacking from a public service viewpoint with consequent degradation in the healthy order of urban society and the spread of disease which from then began to reduce the population of the city and the whole of Mesopotamia.

Culturally, Baghdad and the country began to decline owing to the disruptive and backward evolution of the society compared with the progressing towns of Europe.

The original Baghdad has disappeared and the new settlement was developing on both banks of Rusafah and its suburb Karkh, centred around the main constructions built earlier. They have developed into continuous settlements comprising the modern city of Baghdad.

When Ibn Battutah travelled through Baghdad in 1327, he found no trace of al'Adudi Infirmary. He also stated that most of

the city was in ruins. He had seen the same chief mosques of the last period, i.e. al-Rusafah, al-Sultan and al-Kadhim, all of which were outside the wall. He was the last one to mention the mosque of al-Mansur, which must have fallen into ruins. He had admired the colleges of al-Mustansiriyah and al-Nidhamiyah located on suq al-Thalatha. This indicates the survival of intellectual status in the city. He found two pontoon bridges in the city centre, the first was at the site of the present club for Army Officers, and the lower was near the Ministry of Justice very close to the present bridge of al-Shuhada.⁹⁰

The description of the city given by al-Mustawfi was not so different from that of Ibn Battutah three years earlier. He described the wall of the East Side. According to al-Mustawfi, the circuit of al-Kadhimiyyah was 6,000 paces.⁹¹

The thirteen mahallahs of which Baghdad was set up were almost separately standing, and shapeless in form as there was considerable waste land within them.⁹² Neither of the two authors had mentioned the canal system of Baghdad which therefore must have fallen into disrepair. The built-up area was so small that al-Muhawwal became two leagues (10 kms.) distant from al-Karkh during the time of al-Mustawfi, whereas they were only one league apart during the time of Yakut one century before.

At this time Adhamiyah and Kadhimiyyah developed into two independent townships outliving the original city of al-Munsur. They are still regarded by many of their inhabitants as separate communities despite the fact that most of the area between them and Baghdad is now solidly built up.

Baghdad, however, has gone through a certain physical evolution in this period. A bazaar near al-Nidhamiyah college was built activating Baghdad's commercial function. The still surviving minaret of sug al-Ghazil (the minaret of the thread market) once known as the minaret of Jami al-Khulafa was built in 1289.⁹³

It is 33 m high and used to dominate the skyline of the city up to the second World War (Figs. 5.12h, 5.21 Al-Agulyah minaret in the mahallah of the same name was also built in this period in 1327.⁹⁴

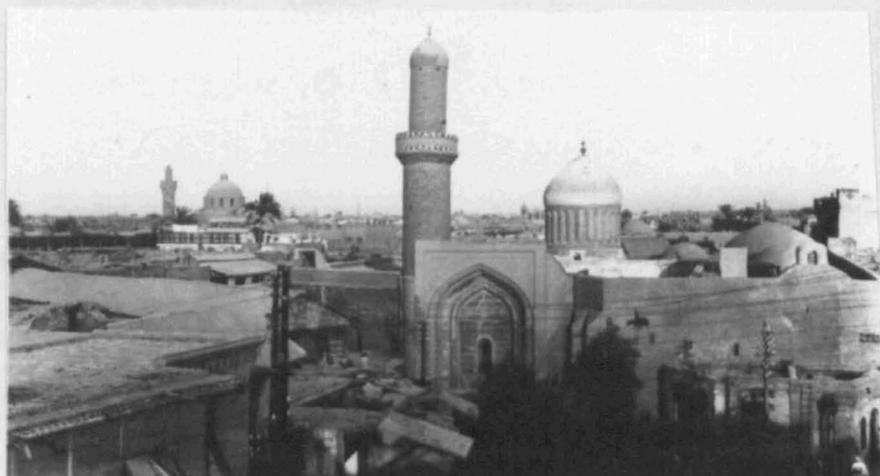
The business core has undergone more structural development reflecting the relatively growing importance of commerce, by the building of the famous Khan al-Tamr (The Khan of the Dates). This was replaced in the 1960's by a 15 storey building of al-Daftardar located in the financial sector of the modern business core.

According to Jawad and Susa the schools of Baghdad were reduced in number to only 11 on the East Side and one on the West Side. The main school was al-'Alaiyah, built in 1293, which is now replaced by the Army Officers' Club near the traditional administration sector of al-Rusafah.

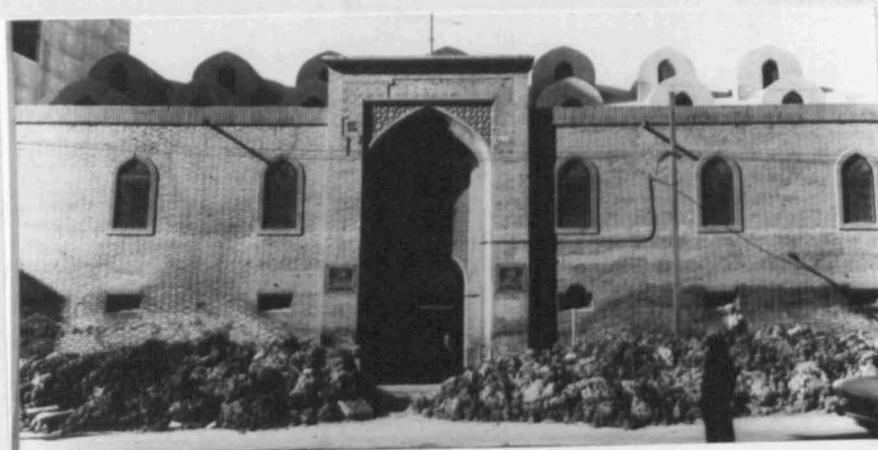
f. The Jalayrid Period: 1338 - 1411 (738 - 814)

Politically this period is one of the worst Baghdad has ever known. This has led to the functional decline and physical stagnation of the city. The sovereignty of the city of Baghdad had frequently changed in this and the following periods. Mongols led by Timur, the last Mongol conqueror, had attacked Baghdad twice. The first attack was in 1392 when the town escaped with little damage. The second in 1401, and if the figure of people slaughtered was less than

Fig. 5.14



a. Mirjan Mosque (Jami Mirjan), with minaret suq al-Ghazil and the Latin church in the background looking south-west



b. Khan Mirjan

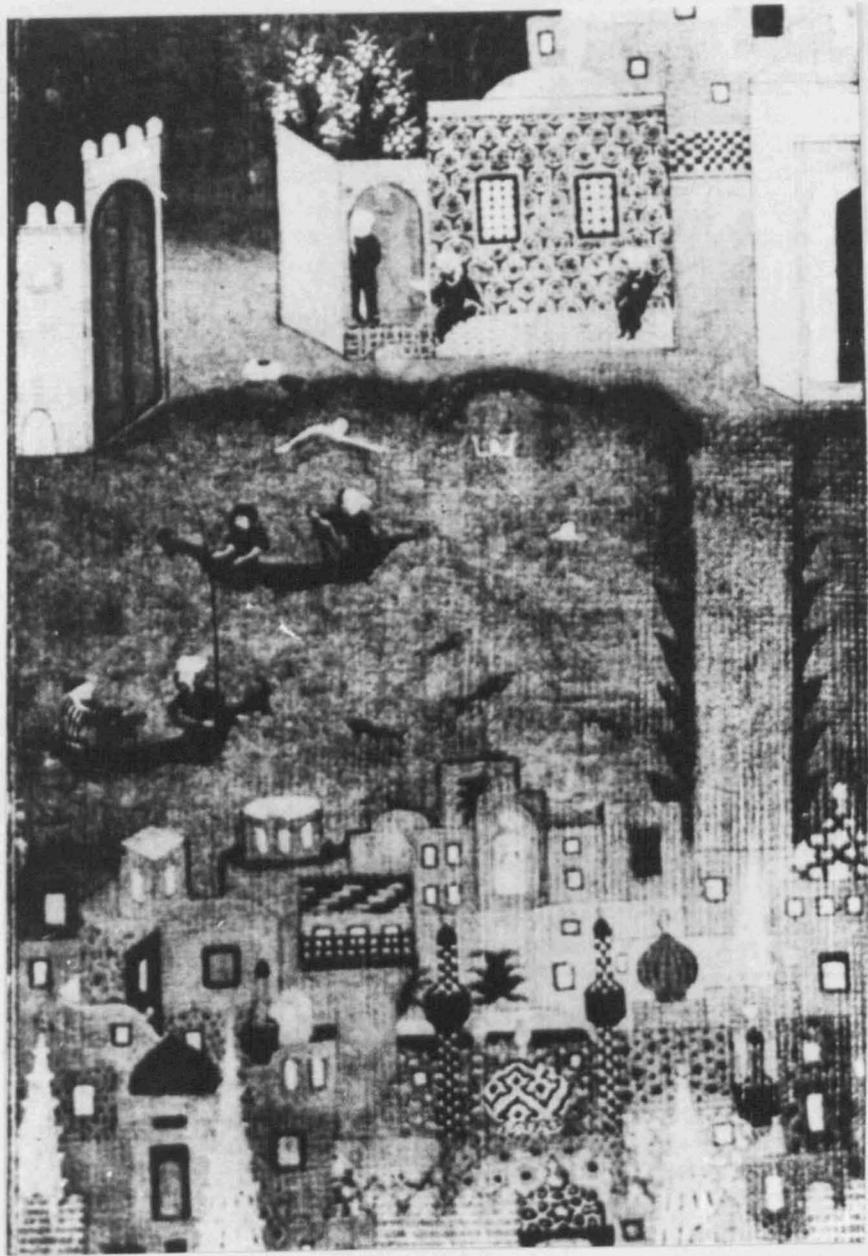
that attributed to Hulagu, it is simply because there were fewer people in the city.* The destruction of centuries of heritage executed by Hulago was completed, and the irrigation system, on which the prosperity of Mesopotamia depended, had been irreparably damaged. Much of this damage was deliberate, as well as being the cumulative effect of sheer neglect.

During the Jalayrid dynasty Baghdad experienced terrible devastations of floods. The floods of 1356 and of 1374 struck ruinous blows to Baghdad's development. Almost all of Baghdad was submerged, and it was said that only one third of the built-up area had survived.⁹⁶

Morphologically there was no essential change in the overall layout of the city except for the addition of two major surviving land marks in the form of the Mosque and Khan of Mirjan which indicates a stabilization period in the central location of the traditional bazaars (Figs. 5.14 a, b). The Mosque of Mirjan was completed in 1374 and, alas, was partly destroyed in 1930's in the name of planning when al-Rashid Street was widened. The annexed famous and well designed, covered khan was built in 1358 and was used as the Museum of Arab Antiquities before the 1960's.⁹⁷ The Mosque was separated from the khan by al-Rashid Street cut in 1916/17. They were at the end of Suq al-Thalatha and now facing each other flanked on al-Rashid Street, at the eastern limit of Suq al-Bazzazin (the bazaar of cloth sellers). They are surrounded by the main central bazaars of modern Baghdad which reflect richness in decoration in the buildings of this period. A considerable

* According to Al-Adhami 90,000 people were slaughtered by Timur⁹⁵.

Fig. 5.15 Baghdad in the 14th century
(after a Persian Painter)



number of buildings in this area are not more than 15 decades old and have begun to give way to new multi-storey buildings. The area contiguous to al-Shuhada Bridge in al-Rusafah has been a commercial focus continuously for more than eight centuries.

Al-Karkh on the opposite side has developed its own bazaar streets, piercing the compact residential mahallahs which have been continuously occupied since the 9th century. The natural starting point⁹⁸ of the bazaars was as it is now, from the Bridgehead heading south-east towards Sheikh al-Qailani Shrine and north-west towards the Mosque of Sheikh Sandal. Baghdad's first pictorial representation was done by a Persian printer between 1356 - 1374 (Fig. 5.15). It shows the pontoon bridge and parts of the central area of both sides of the city, while the Tigris was in flood. Several seljuk-styled domes are to be seen in this picture. According to Jawad⁹⁸ the picture shows Baghdad during the disastrous flood of 1135 as there are poems written about that flood. This pictorial map is reproduced in three places, i.e. in Arnold's valuable work, the Iraqi Petroleum Magazine and Baghdad, An Illustrated Historical Survey, edited by the Iraqi Engineering Society.^{*99}

g. The 'Dark Period'^{**} 1411 - 1638 (814 - 1048)

During this long period of 227 years Baghdad diminished in size. Functionally, the city descended to the level of other regional centres in Iraq, and served a limited area. Morphologically, it continued to be influenced by floods and frequent invasions. The central bazaars remained in their location, and there was no essential change in the

* This pictorial map is found in the British Museum, it holds the number (Add, 16561).

** Ar term adopted by the writer.

fringe-belt and the overall plan of the city.

During this period, one can hardly find any reference to the city of Baghdad. Complete indifference in the attitudes of its frequent occupiers brought the city to its worst condition. Culturally its society sank to the bottom. Schools almost disappeared and illiteracy increased. Modern Baghdad as well as the country as a whole are still suffering from the negative aspects of that period.

The international trade of Baghdad had come to a standstill. The situation in this and the subsequent unstable periods was often aggravated by worsening of security. This in turn, led to a gradual decline of cultivation of the region around Baghdad, and the deterioration of its drainage system.

A considerable number of Baghdad's inhabitants having deserted the city the population diminished to the extent that the limited walled area of the 12th century was never fully occupied. Under the Qara Quinlu dynasty 1411 - 1469. (814 - 874),¹⁰⁰ Baghdad was described as a ruined city without Friday Mosque and also without bazaar¹⁰⁰ though the half-ruined bazaars of Baghdad still attracted the country people, the bedouins and in rare cases foreigners who found some business to do.¹⁰¹

The most disastrous feature was the lapse into tribalism which took place from this period on. Not only Baghdad but the whole of Mesopotamia was suffering from the spread of tribalism which now began to play its turbulent role in social life and indirectly in changing the shape of the city.

In 1508 Baghdad passed to the occupation of the Safavids of Persia, led by Shah Ismail, following a serious flood in the same

year.¹⁰² This invasion marked the inauguration period of Turko-Persian conflict for the possession of Baghdad, which dragged on for three centuries. Thus the economic recovery of the country was impeded. Iraq became the battlefield for the warring Ottoman and Persian armies. The result was that Baghdad and other Iraqi towns sank very low. The population of Baghdad which may have been more than a million, had shrunk to 50,000 - 100,000 in the late Ottoman period.¹⁰³ The city was paralysed by the factional schism of Sunnahs and Shiahhs and this underlying tension divided the populace, the Sunnahs backing Ottoman occupiers and Shiahhs backing Persian occupiers. The Shiah mahallahs were al-Kadhimiyyah and certain sections of al-Karkh. Other mahallahs were populated by the Sunnahs and other religious factions.

Most of the tombs and shrines of the Sunnah worthies were levelled to the dust by Shah Ismail, such as the shrines of al-Qailani and Abu Hanifah. Thousands of Sunnahs were deliberately slaughtered.¹⁰⁴ On the other hand, the Shah started to build the Shrine of Musa al-Kadhim in 1515,¹⁰⁵ which became the predominant morphological element in Kadhimiyah. As expected, many Persian merchants flocked to Baghdad and increased commercial activity. Thus they compensated for the situational decline after the Portuguese seizure of the Arabian Gulf early in the 16th century. Frequent invasions and destruction of the city reflected by the fact that geographically Baghdad still had high situational importance and thus attracted various powers to dominate such a situation strategically. Probably in this period Shiahhs began to mourn al-Husain, the grandson of Ali, the fourth Caliph after the Prophet, as the Shah had ordered such action.¹⁰⁶ This annual

Fig. 5.16 Baghdad in the 16th century
(after N. al-Silahi)



commemoration is still practiced by Shiah in Baghdad and the southern parts of Iraq.

For the second time Baghdad suffered two short periods of occupation by Kurds and Persians. In 1534 (941) it surrendered to the Turks under Suleiman the Magnificent. Ottoman occupation, lasting 91 years, ended in 1621 (1030), when Baghdad was invaded by the Persians for the third time, all of these occupations involving further destruction. In this period Baghdad became a merely provincial capital of an outlying Ottoman province or wilayat. Thus it was diverted of many of its former functions resulting in further physical degradation and enlarging the intramural waste land. In 1537 (944) another pictorial map of Baghdad was drawn by Nassuh al-Silahi, who accompanied the Turkish troops.¹⁰⁷ This drawing shows a wider area than the former Jalayrid one (Fig. 5.16). The map excludes Bab al-Halabah later to be known as al-Tullissim. The walled citadel is shown on the north-west corner of al-Ruafah. Al-Sultan mosque which was described by Ibn Battutah in 1327 is shown standing isolated to the north of the wall.

The emergence of the citadel which was not mentioned by the historians of the period has a high functional and topographical importance. Since then the north-west corner of walled Rusafah has become the administrative centre (Figs. 5.9, 5.16, 5.18, 5.21), and remains an important administrative section of modern Baghdad. The citadel added to the significance of the bazaar location, at the same time representing a re-intensification of the hitherto stationary or even receding fringe-belt. On the West Side the conical tomb of Zummurud Khatun who died in 1202 (599)¹⁰⁸ is to be seen. As it stands today, it is built of bricks, has a high

octagonal shape and is surmounted by a lofty, upper structure in the form of a cone. This latter part is elaborately decorated with small arabesque niches, rising one over the other till they reach the top. The tomb is identical with that of al-Sahrawardi on the Rusafah side, both forming integral elements within the Inner Fringe-Belt of present-day Baghdad.

The minaret of Sheikh Maruf al-Karkhi (d. 815)¹⁰⁹ is also shown, together with the tombs of Bahlul Danah and of al-Hallaj (all pious leaders of orthodox Islam). The painter also showed many conical or pineapple shaped minarets on the East and West Sides. These are uncharacteristic of Mesopotamian architecture and the likelihood of their ^sexistence at that period is small, since Baghdad has now only two minarets of this style, the already mentioned minarets of Zummurud Khatun at al-Karkh and of al-Sahrawardi on the East Side.

The floods, especially of 1043 (634)¹¹⁰, the destruction caused by the invaders and neglect had reduced the built-up area further. Many mahallahs populated by Sunnahs, especially in Rusafah, had become depopulated, resulting in the obliteration of sizeable areas.

Almost all the urban amenities of today, such as conservatories, hospitals, schools, and any town planning, were lacking in Baghdad during that long period. Public constructions and welfare work fell to the Janissary garrison aided by private watchmen appointed by merchants. Corruption reigned supreme.¹¹¹ The stately public buildings of former times were abused. For example, al-Mustansiriyah, the once famous academic institution was changed to a khan, a hospital or even an army barracks.¹¹²

The spatial location, the religious and commercial constructions remained unchanged and linked with the city gates, so establishing

the Zuqaq system of the city. The Bazaars which numbered seven or eight at this period, catering for goods and workshops of all sorts, kept their sites near the only pontoon bridge.* A few beautiful Friday mosques were built in this period such as the mosques of al-Muradiyah at al-Maidan, al-Khaffafin, near al-Mustansiriyah college and the mosque of al-Asifiyah at the beginning of the present cloth bazaar (suq al-Qumash). These three mosques are still standing as showpieces in the central area of the city (Fig. 5.2E), and play an essential role in stabilizing the spatial layout of traditional Baghdad. Around them more commercial land uses developed and increased the residential prestige of the central mahallahs.

The city on both banks was walled at the time,¹¹³ having perhaps 20,000 to 30,000 houses, most of which were built with old bricks collected from destroyed buildings. The ruined area around al-Karkh stretched for eight kilometres, a reminder of the greatness of the city in earlier centuries. About one third of the space within the walls of Baghdad lay waste and there were many palm groves,¹¹⁴ indicating the stationary phase of the fringe-belt. If one accepts the estimation of 30,000 to be the number of the then houses of Baghdad, and applies the same calculation principle as was used for the first Abbasid period, Baghdad's area would be: $30,000 \times (200 + 50) = 75,000,000$ sq. m, i.e. one seventh of the built-up area of the tenth century. It is to be noted, however, that only a few of the traditional houses are 200 sq. m in area, more often they are about 100 sq. m.

* For maintenance of the bridge there was a toll of half pence on every load of goods inward or outward bound.

The Wall of al-Karkh mentioned previously, has not been described or plotted by any of the writers who referred to it, thus making it impossible to locate it on a plan. In 1030 the city was again devastated by the siege and invasion of the Persians, led by Shah Abbas, who massacred many sunnahs,¹¹⁵ thus intensifying the sectarian denominational struggle among the citizens.

h. The Ottoman Period to 1869 (1286):

This period lasted for more than 23 decades, of socio-political and natural disasters. During it the city stagnated, declined and occasionally revived. Most of the newer elements such as bazaars and mosques were developed in the central area, whereas the fringe belt continued without substantial change. As before, any functional and morphological development during this period was based on the two aspects of commerce and religion, as exemplified by mosques and bazaars. Travellers, mainly Europeans, were impressed only by these two types of constructions around which Baghdad's life evolved. Most of modern Baghdad's inherited physiognomy belongs to this period, during which the city opened itself for the first time to European influences, which exerted themselves through commerce, technological development and cultural aspects. These influences manifest themselves in forms emerging simultaneously in the centre and the fringe-belt.

Most of the information about Baghdad in this period is derived from the works of European travellers who were the first to visit the city. Almost all of them, like the Arab historians before them, omitted to refer to the internal arrangements of the city. A confusion about the names of various places indicates the uncertainty of their topographical knowledge.

After oscillating for over a century between Persian and Turkish occupation, Mesopotamia was incorporated into the Ottoman Empire in 1638, when Murad IV conquered Baghdad.¹¹⁶ Along with other Arab countries, Iraq was separated during a period of more than six centuries of hopeless decay from both its own past culture and the progressive developments that took place in Europe. In this long succession of foreign dominations one of the worst was the long Ottoman occupation.

With very rare exceptions, Ottoman Walis (governors) had less interest in maintaining the city than in exploiting it.* Thus public works and endowments of religious institutions, although not coming to a halt, were considerably reduced. There were no state services, budgets,** procedures or special personnel concerned with the economic, cultural and religious needs of the townspeople, although Walis as representatives of the central government in Istanbul were responsible in a general way for the well-being of towns and for whatever administrative works seemed essential for internal law and order and the flow of revenues. Any improvements were at the personal discretion of the individual wali. Such action met with praise or blame from the central government only in so far as they pleased or displeased the Sultan or affected the payment of taxes. The principle of public works had not been fully established, its exercise remaining a function of the garrison. Instead of distributing the taxes on the city as a

* Lack of any interest in the past of the country for example was shown by the sale, for one penny, of a fine man-headed stone lion and other visible remains of Niniveh, by a bribed Ottoman guard to a man who wanted to break them up to repair his mill.

** The first Ottoman budget drawn up on modern lines was that of 1863-64.¹¹⁷

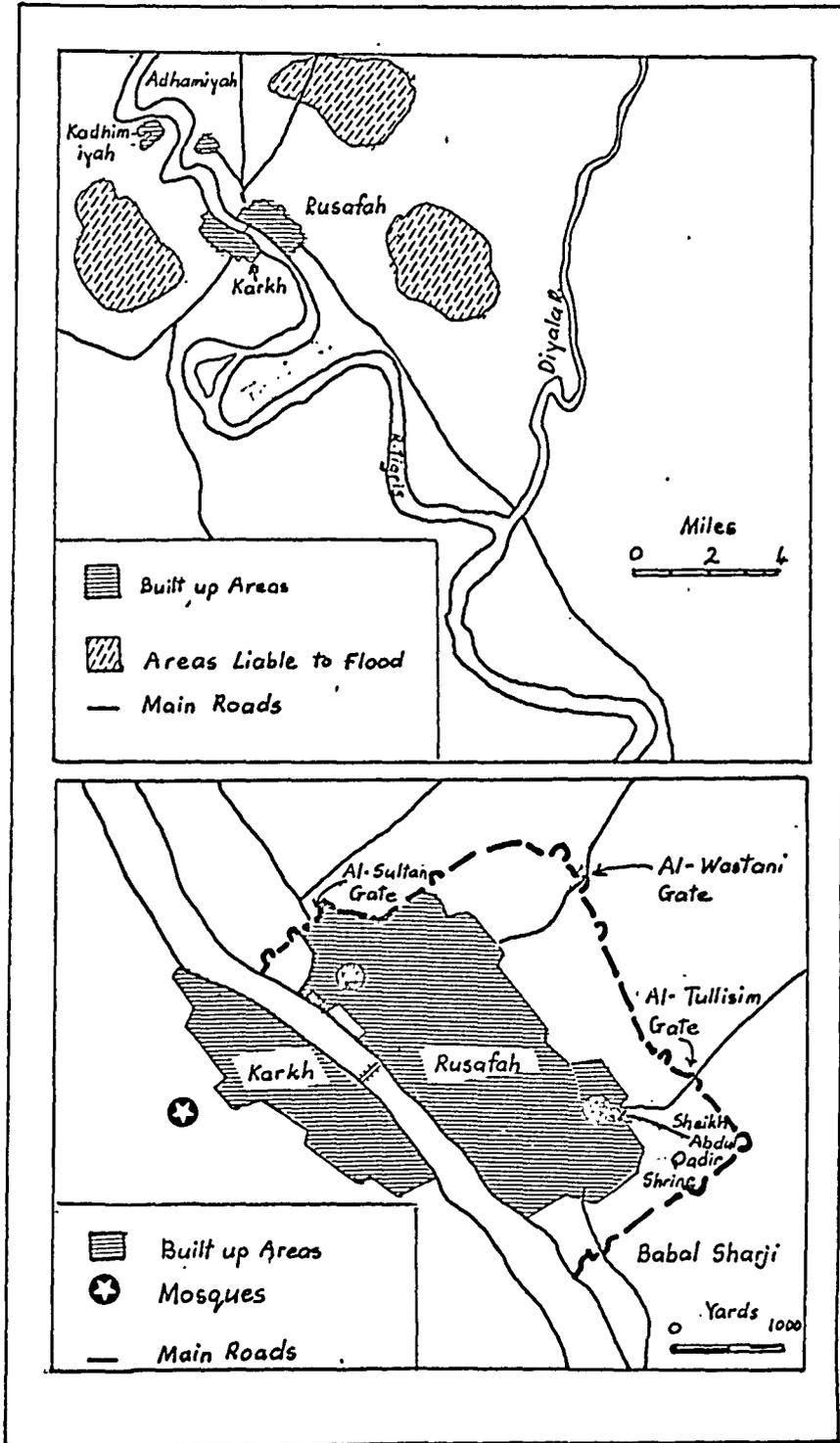
whole, the people most directly concerned were held responsible. Shopkeepers or house owners were sometimes ordered to whitewash their properties and even to decorate them with special designs. As in ancient times, the domains of public and private responsibilities were not clearly distinguished.¹¹⁸ Nearly all the Ottoman city officers were bribed and subject to transfer or retirement at any time. For example, Baghdad was governed by 41 walis between 1638 - 1737, and there was no opportunity for real improvement.

This long period was also troubled by bedouin unrest, which had precipitated the disastrous destruction of productive agricultural areas. The power of the tribes repeatedly threatened the life of Baghdad and the other towns, putting trade in an insecure position.

The city itself was divided into two parties, Sunnahs and Shiahs, whose hostilities continued throughout the Ottoman occupation. Baghdad's alleyways and sahs became the scene of fighting, either between its inhabitants or between them and the attacking tribes. The result was always the sacking of bazaars, fire and destruction.¹¹⁹ All this was happening in Arab towns while western Europe was exploring the world¹²⁰ and ^{western} cities were more properly and persistently improving. The state courier and postal communication system collapsed, and the stations on which caravans depended fell into disrepair. Iraq, however, did not acquire any other system of transport except a very primitive network of dusty roads which were only suitable for walking and pack animals.¹²¹

In the middle of the 17th century Baghdad was reviewed by Tavernier, the French jeweller who visited it twice in 1632 and 1652. Confused by names, he called the city of Baghdad Babylon or Baghdad. He described the city as an irregular oblong, almost 15,000 paces long

Fig. 5.18 Baghdad in the 17th Century
(Modified After Longrigg)



and 700-800 paces broad. He put the perimeter of Baghdad at 3 miles. He saw five mosques, two of which were of noble impressive architecture. The city had ten khans which he called 'inns' two of which offered convenient facilities for travellers. The bazaars which were all vaulted were attractive and full of trade but not as full as in the past. The city was badly built and in decline. He put the number of Baghdad's population at 15,000, although it is unlikely that the population ever dwindled to this extent.

In his plan (Fig. 5.17) one can perceive a certain likeness between the frame of the city in his time and the beginning of the 20th century. The eastern side was surrounded by a wall of bricks, with towers at varying intervals, beyond which was a ditch. These towers do not appear in the drawing of al-Silahi of 1537. His description of the wall was similar to that of Ibn Jubair given four and a half centuries earlier though he gave different names to its gates. The river gate stood at the east end of the bridge, the latter being moored almost on the site of the modern al-Shuhada Bridge. In the same drawing, certain unfamiliar European-style buildings, purport to represent Baghdad's suburbs.¹²²

During the first century of Ottoman occupation Baghdad had suffered from floods such as that of 1657,¹²³ the plague of 1719 and the Persian occupation of 1733,¹²⁴ all resulting in the pillage of the city and the killing of thousands¹²⁵ of its inhabitants, and reducing still further its built-up area, (Fig. 5.18). Despite these disasters certain building developments took place. The main one was the fine bazaar, just south of al-'Asifiyah mosque near al Mustansiriyah college which still exists. It was built between

1667 - 1671¹²⁶. It now specialises in carpets and second-hand clothes, also in traditional bedouin goods. This bazaar has increased the functional efficiency of this central area and influenced the physiognomy of the city. Al-Khasaki congregational mosque was built in the heart of the city, at Ras al-Qrayah. During this period also the still remaining sand dyke of al-Adhamiyah was built to prevent flooding.

By the middle of the 17th century a resurgent Persia helped by Dutch and British had succeeded in expelling the Portuguese from the Gulf, and this had a favourable effect on transit via Baghdad. However, in the following century, the decline of Persia's economy, the series of wars between Britain and France, the increasing weakness of the Ottoman Empire, and the growing insecurity inside Mesopotamia, combined once more to reduce trade and the prosperity of the city.

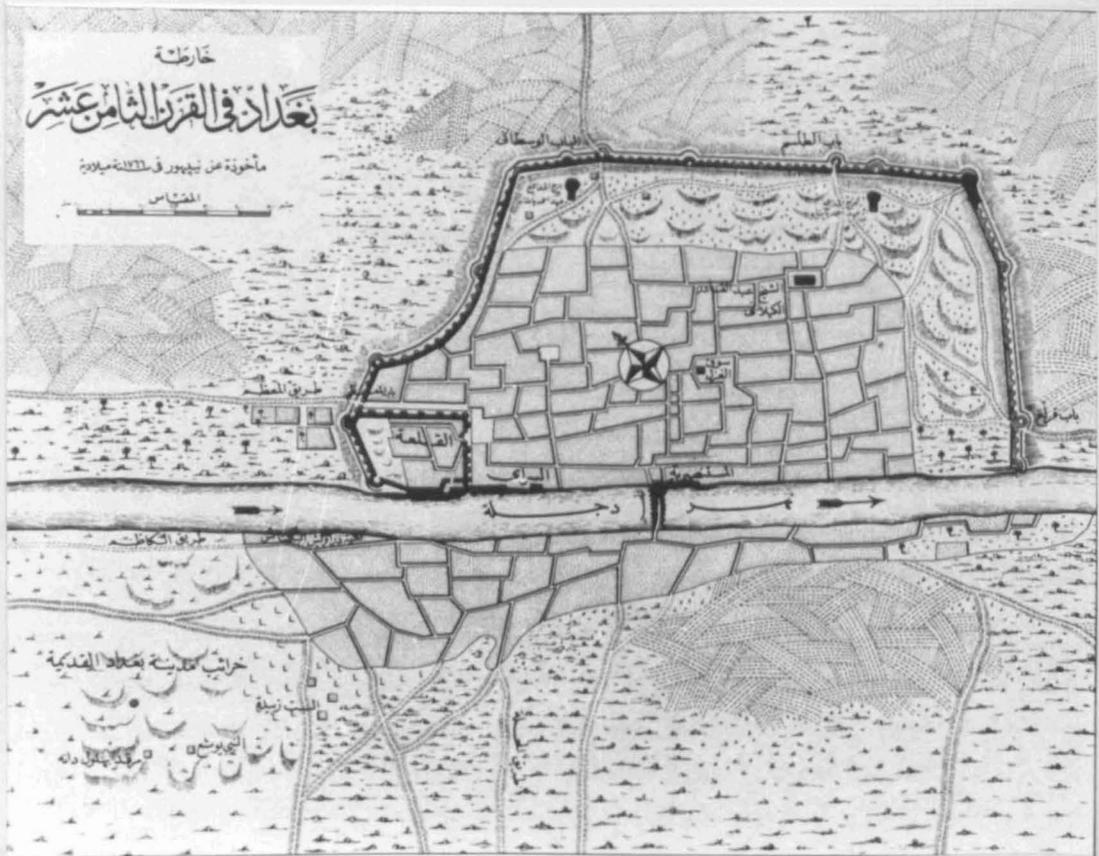
The Mamluk* sub-period:

In the period 1748 - 1831, Baghdad was governed by the Mamluk regime of slave soldiers, who not only differed racially, but in origin and language from the overwhelmingly Arab people of the country over whom they ruled.

During this period Baghdad was more a dependency than an integrated part of the Ottoman Empire. The fighting between Mamluks for supremacy was a common occurrence and was encouraged by the sultans. Residences of walis were the most notable buildings in the city during this period, being always at Rusfah and not far from the citadel. The inhabitants of mahallahs and soldiers were compelled to build or rebuild public building without payment.

* The Mamluks were recruited as slaves in the Caucasus and Russian steppes while still young, and though converted to Islam, remained isolated from the people of Baghdad owing to a system of upbringing which confined them to barracks and won their sole allegiance to the walis or princes who trained them. Mamluk means 'owned slave' in Arabic.

Fig. 5.19 Baghdad in 1766 (after Niebuhr)



Reliable information about the city can be derived from the work of Niebuhr (a Danish traveller) who travelled through Baghdad in 1750. He produced the first scaled but generalized plan of the city,¹²⁷ (Fig. 5.19)* His description of the city of Baghdad was confirmed by later travellers. His boundaries of mahallahs are rather geometrical in outline and this is unlikely in any traditional Arab town.

In his plan, Niebuhr has shown al-Sarai, the major administrative centre. This large building reinforced the administrative importance of this part of the city as it was annexed to the citadel. Since then al-Sarai has been either restored, enlarged or replaced by better buildings. It is a significant landmark in Baghdad's townscape evolution.

The many masjids (neighbourhood mosques) and twenty Jamis (Friday mosques) distinguished by their minarets reflect the religious function of the city. Presumably the city maintained some of its commercial significance as there were twenty khans annexed to the main bazaars and in the same area as the khans and 'alwaha of modern Rusafah and Karkh.

The city at the time had twenty hammams scattered in the residential mahallahs, but not far from the mosques. The city proper was so small that a considerable part of the walled area of al-Rusafah was unoccupied. Al-Karkh, the suburban right or West Side of the city, was unwalled and had numerous gardens. The two 'sides ' were connected by the only pontoon bridge, shown moored almost in the middle of al-Rusafah. The river gate was shown as Tavernier had done in his plan one century earlier, (Fig. 5.17).

* This plan is reproduced with Arabic names in Dr. Susa's Atlas (p.14).¹²⁸

Fig. 5.20 Baghdad in 1808 (after Dupre)



The main historical tombs and shrines still extant today, are also shown in this plan. They are located on the outskirts of the city proper, surrounded either by ruins or cemeteries. They marked the fringe-belt of the city which had sizeable vacant land.

Adhamiyah, having the same traditional houses in Baghdad was a secluded small settlement surrounding the mausoleum of Abu-Hanifah. Apart from their size, the houses of Baghdad had quadrangular courtyards, commonly colonnaded on one side. The courtyard occupies a considerable part of the plot and in many cases contains a fountain or small garden, probably similar to existing houses in Old Baghdad. Around al-Hosh (the courtyard) are rooms with level roof terrace for sleeping in summer. In the old parts of modern Baghdad the houses for wealthy and ordinary people looked alike until one entered.

Probably the data given by Dr. Dupre' (a Dutchman) in 1808 reflect the real situation of Baghdad at the time. According to him the city comprised 15,222 families consisting of 76,000 people, out of which 2,000 families were Jewish. In his bird's eye view of Baghdad (Fig. 5.20) the East Side wall is shown clearly. The trade, he said, was growing and caravans of camels, mules and horses were frequenting the roads between Baghdad and Turkey, Persia, Arabia and Syria.

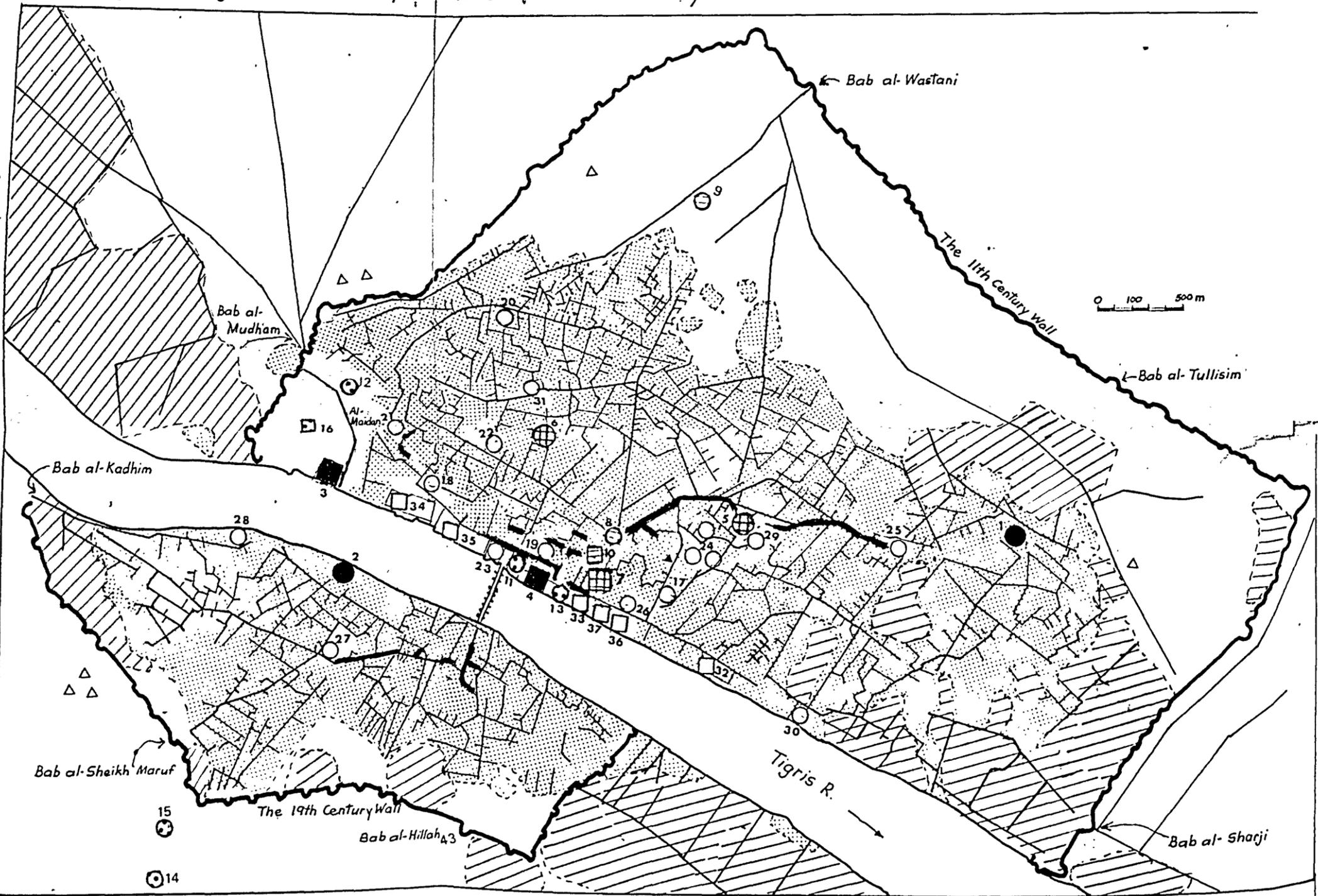
The number of houses, population and shops were estimated, in 1779 at 80,000, 300,000 and 12,000 respectively.¹²⁹ The population was said to be four times as big as this figure before the 1772 plague. This doubtless must have been an excessive estimate. The plague of 1772 lasted six months and between 50,000 - 60,000 people perished, and many of the survivors deserted the city leaving the population

at 100,000.¹³⁰ Accordingly commercial activity came to a standstill. The tribes took advantage of this situation and attacked the city, looting its bazaars and destroying many of its mahallahs.¹³¹

Reviewing the work of Parsons who travelled through Baghdad late in the 18th century, al-Rusafah continued to be the most significant portion. That is natural as it was the place of government, the wealthy people, the chief Friday mosques, bazaars and khans, together with the mint and craft workshops which were concentrated on this side. The official houses around the citadel were located on the north-west side of al-Rusafah separated from the other mahallahs by a great maidan from which several bazaars were emerging, heading towards the only pontoon bridge, (Fig. 5.21). Khans were the safest places for foreign merchants and merchandise. Like those of today they were quadrangular in shape, having only one entrance each with a stronggate leading to the sahal, which was surrounded by sizeable and beautiful porticos, shops and stables. The rooms of the first floor were exclusively for residence. Eight khans were efficient enough to be continually used by caravans.¹³²

The year 1755 witnessed a historical event, which affected the evolution of the city of Baghdad and the whole of Mesopotamia in several ways. In this year Britain established the first commercial agency in Baghdad. Before then almost all the changes and developments occurring in Baghdad were induced either by local or eastern forces for political reasons. Now the west played a part in the fortunes of Baghdad for both political and economic reasons.¹³³ These increasing influences were fashioned by residents, agencies, travellers, and missionaries. The first British residency in Baghdad was established in 1798, followed by French and German residences.

Fig. 5.21 Baghdad's Townscape in 1853 (Modified after Jones)



- Period Features
- Abbasid Period
- Religious Buildings
 - 1 Sheikh Abdul Qadir Shrine
 - 2 Qamariya Mosque
 - 3 The Abbasid Palace
 - 4 Al-Mustansiriyah
 - 5 Suq al-Ghazil Minaret
 - 6 Aguliyah Mosque
 - 7 Khan Tamr
 - 8 Mirjan Mosque
 - 9 Al-Sahrawardi Tomb
 - 10 Khon Mirjan
 - 11 Asifiyah Mosque
 - 12 Muradiyah Tomb
 - 13 Al-Khaffifin Mosque
 - 14 Zubaidah Shrine
 - 15 Sheikh Maruf al-Karkhi Tomb
 - 16 The Citadel (al-Qalah)
- Ilkhanid Period
- ⊕ Religious Buildings
 - 5 Suq al-Ghazil Minaret
 - 6 Aguliyah Mosque
 - 7 Khan Tamr
- Jalayrid Period
- ⊖ Religious Buildings
 - 8 Mirjan Mosque
 - 9 Al-Sahrawardi Tomb
- Dark Period
- ⊙ Religious Buildings
 - 11 Asifiyah Mosque
 - 12 Muradiyah Tomb
 - 13 Al-Khaffifin Mosque
 - 14 Zubaidah Shrine
 - 15 Sheikh Maruf al-Karkhi Tomb
 - 16 The Citadel (al-Qalah)
- Ottoman Period
- Religious Buildings
 - 17 Al-Khasaki Mosque
 - 18 Al-Sarai Mosque
 - 19 Al-Qiblaniyah Mosque
 - 20 Al-Fadhi Mosque
- 21 Al-Ahmadiyah Mosque
 - 22 Haiderkhanah Mosque
 - 23 Al-Wazir Mosque
 - 24 Churches of Armenians, Americans and Lotins
 - 25 Siraj al-Din Mosque
 - 26 Adiliyah Mosque
 - 27 Sheikh Sandal Mosque
 - 28 Khidhr Iliat Mosque
 - 29 Suq al-Ghazil Mosque
 - 30 Saqid Sultan Ali Mosque
 - 31 Abbas Afandi Mosque
 - 32 The British Residency
 - 33 Khan al-Masbaghah
 - 34 Al-Sarai
 - 35 Al-Qishlah
 - 36 The Court
 - 37 Khan al-Dafterdar
- Public Buildings
- 3 The Abbasid Palace
 - 4 Al-Mustansiriyah
 - 7 Khan Tamr
 - 16 The Citadel (al-Qalah)
 - 32 The British Residency
 - 34 Al-Sarai
 - 35 Al-Qishlah
 - 37 Khan al-Dafterdar
- Features not Tied to any Particular Period
- Y Streets and Alleys
 - ≡ Bridge
 - Bazaars
 - ▨ Residential Areas
 - ▧ Orchards
 - Waste Land

The appointment of Mr. Rich as a British Consul in 1808 marked the success of the British policy. Through his friendly relationships with both the wali and the inhabitants, British trade flourished.¹³⁴ * His residency, however, could be considered as the nucleus around which the famous mahallah of al-Sinak has developed at al-Rusafah.

During the reign of the celebrated wali Sulaiman Pasha (1780 - 1802) Baghdad became the capital of almost the same area as present-day Iraq. He united the Wilayahs of Baghdad, Mosul and Basrah. In this time Baghdad became a main entrepot where many goods were imported to be dispersed again to Mesopotamian and Turkish towns, to Persia and India as Baghdad's local consumption was limited. The restoration of the caravan road to Mecca added to this commercial rejuvenation.

Except for dates, tobacco and few ^owollen manufactures Baghdad had no indigenous products for export. External commercial relations were maintained exclusively by circulation and exchange of foreign goods.¹³⁶

The superb crafts of medieval Baghdad had been greatly reduced in quality and quantity. Although many different crafts did survive their quality had also been reduced.

In this period Baghdad experienced a revolutionary plan of evolution, when al-Karkh was fortified by a wall, beyond which was a ditch, between 1779-1802.¹³⁷

As one has seen from the Part II, Karkh is more secure from flooding, accordingly the wall and moat were eventually used for the street of Sheikh Maruf, early in the 20th century. Consequently

* To indicate the increasing influence in Iraqi affairs, the Deputy British Consul was called the White Sheikh, since he was a respected official with considerable influence among the Arab Sheikhs.¹³⁵

the line of the wall can be traced easily (Fig. 5.21). It is a salient fixation line on the West Side around which certain peripheral land uses have developed.

Several fine mosques were either built or began to be built in this period, such as al-Qiblaniyah, Dawood Pasha, al-Fadhl, al-Ahmadiyah and al-Haidorkhanah.¹³⁸ They are still serving a considerable part of the commercial centre and traditional mahallahs of al-Rusafah.

The houses of Baghdad were estimated to be 100,000 at the beginning of the 19th century, out of which 1,500 were Jewish and 800 were Christian.¹³⁹

Al-Kadhimiyyah, the isolated township had 3,000 houses, intermingled with many coffee houses, serving both local inhabitants and pilgrims. Al-Adhamiyah, the other settlement across the Tigris had only 100 houses.

Baghdad was said to have 24 hammams and 200 mosques, dominating the physiognomy of the city.¹⁴⁰

Although there is no mention by any of these writers of the spatial distribution of these constructions, they were, as now, mainly concentrated near the bridge, representing the 'kernel' of the city.¹⁴¹

In the period of Dawood Pasha (1816 - 1831) Baghdad revived and experienced some physical changes. Al-Sarrajin, the extant monumental bazaar was built, running between the bridgehead of al-Shuhada and al-Sarai . . . According to Chesney it was one of the best in the East and well stocked with home and foreign commodities. It specialises now in leather craft. The first two factories run on modern lines, for the production of cloth and of arms, were built in this period.

The Mamluk reign ended with the death of Dawood Pasha in the plague of 1831. Thus the Ottomans directly regoverned the city.

In 1831 Baghdad was visited by flood, famine and a plague and the population was reduced considerably. Many figures have been given suggesting the aftermath of these disasters. Longrigg puts the population at 50,000,¹⁴² Chesney at 65,000¹⁴³ and F. Jones at 60,000¹⁴⁴ inhabitants. The outbreak occurred in the poorer houses of the Jewish mahallah.¹⁴⁵ Several mahallahs were destroyed, and within 24 hours 7,000 houses were razed to the ground,¹⁴⁶ (Fig. 5.7). In spite of the great discrepancy between the figures mentioned, they reflect one fact that Baghdad sank from metropolis rank in the 9th and 10th centuries, to an isolated crumbled provincial town. The area of the East Side and the West Side became only 591 acres and 146 acres respectively, putting the whole walled area at 737 acres.¹⁴⁷ The ruined areas within the walls of al-Rusafah were not developed until the 1930's.

Yellow and red burnt bricks were used in both public and private buildings. Most of the bricks used had rounded corners indicating that they had been repeatedly used before.¹⁴⁸

Apart from the few bazaars, which had tolerably regular outlines the whole of the alley systems were narrow, winding and unpaved. Al-Sarai, the office complex and the surviving twenty to thirty mosques were the only architectural show-pieces. Buckingham put the number of khans as high as 30, including al-Mustansiriyah college which had already changed its function.¹⁴⁹

Quffahs,* were the common means of river transport in the Tigris at Baghdad, which continued until the late 1920's (Fig. 5.2b). Until the railways were built in Mesopotamia during and after the First World War, river navigation constituted the only modern means of transport. Fleets of boats varying from 40-70 tons each sailed to and fro between Baghdad and the Arabian Gulf.¹⁵⁰

In 1840 the British had established the London and Baghdad Banking Co., thereby adding an important and indeed an indispensable facility to the trade which was steadily increasing.¹⁵¹

According to Coke, Baghdad in the 1850's had a considerable caravan commerce, when it sent annually as far as Erzurum 2,000 mule loads of pearls, silk, cotton stuffs, shawls, coffee, gall-nuts, etc.¹⁵²

Caravans continued in use until the end of the 1920's. Consequently, many inter-city caravan stations were developed at regular intervals.

All through this long period of troubled history Baghdad succeeded in maintaining two distinctive features. It was still a main commercial centre in the country, and was still a 'holy city', a shrine that sheltered the remains of saints sacred in their various ways to Sunnahs and Shiah.¹⁵³ But here one has to know that the inconvenience and exactions, which the Persian pilgrims experienced from the Ottoman officials when visiting the sacred shrines in Kadhimiyah, led to a law

* Quffah, is a circular basket-boat, used on the Tigris and Euphrates but more in Baghdad than elsewhere. It is constructed of osiers, plaited together, precisely like baskets, over a circular frame of stout materials. The section shows a gentle curve at the bottom with a deeper one above, forming the side. The common method is to cover the bottom with bitumen, which being smooth as well as hard effectually excludes the water, and is more easily and cheaply procured. The smallest sized Quffah is about 3 feet 8 inches in diameter, and 2 feet 6 inches deep. This vessel is managed by one man who uses a large-bladed paddle alternately on each side. There are other Quffahs, however, varying in size up to 10 feet in diameter, with a depth of 3 - 3½ feet. Some are even larger and are capable of carrying a camel with several persons in addition.

passed in Persia prohibiting the pilgrimage. This journey combined the advantages of a sacred character along with the profits of commerce. Persian money, thus flowed into Baghdad in a continual stream in the form of 15,000 - 20,000 pilgrims annually,¹⁵⁴ and stimulated trade. The channel was stopped by the Shah's orders; and disorder in Baghdad's province itself further impeded the progress of its merchants.

In 1853 F. Jones visited Baghdad. He found its wall irregularly built, it seemed to have been constructed on no systematic plan but to have been drawn around the various groups of buildings. He put the length of Baghdad's walls at 16,400 yards; 10,600 yards for Rusafah and 5,800 yards for Karkh respectively.

Baghdad was comprised of 88 mahallahs; 63 at al-Rusafah, and 25 at al-Karkh respectively. Many of them still retain their names.

Jones¹⁵⁵ put a priceless and precise plan for Baghdad (Fig. 5.21). It is the first reliable plan. and surprisingly is still applicable in the traditional parts of Baghdad. All the main tombs and shrines, which were mentioned more than once are shown in his plan. Virtually Baghdad's plan did not differ from this plan before the First World War.

Al-Karkh was shown as a walled suburb. The four gates of this wall were respectively, Kraiat, Hillah, Sheikh Maruf and Kadhimiya. The wall has been replaced by Sheikh Maruf Street, now a major traffic street. Hillah Gate, gradually became a chief business centre in al-Karkh, as it has been replaced by a square, lined by a branch of al-Rafidain Bank, metropolitan hammam, garages, coffee houses, open markets and many other shops, serving a wide metropolitan area. This area became the terminus and starting point for the city and country-wide traffic lines.

The structure of the city in this period is exceptionally important, for any morphological study of modern Baghdad. This is because of the fact that most of the constructions of the city, public and private, were submerged in the great flood of 1831. But all the new buildings were rebuilt in architectural styles and according to the alley-street system which had for a long time been traditional, possibly from the 11th century or even before. Houses and street development were dictated by no laws but those which were imposed by type of terrain, property limits and owners' wishes, all of which contributed to shape the traditional Baghdad. Shops quickly grew around all available public squares, streets, or more correctly *zuqaqs*, mosques, facades of buildings and bridges. *Walis* sporadically exercised a right of 'eminent domain', seizing properties which encroached on public spaces, removing nuisances and dangers and widening the *zuqaqs*.

S.P.X. 9.11

It is worthy of note that *mahallahs* may have lacked defined physical form, compared with the "modern city block" because people needed privacy, isolation and protection. At the same time there was a lack of concern for public as opposed to family life. During this period, *mahallahs* in times of stress emerged as important units of action against raids. Thus occasionally, they were centres for resistance against occupations or against certain *Walis*. As now, in the old section of Baghdad, the *zuqaqs* were narrow, intricate and twisting. Most of these *zuqaqs* were overhung on both sides by the projecting wooden upper storeys of the two-storey houses, while the commercial bazaar streets were often completely arched over by bricks. In effect, for Europeans, Baghdad was a maze of what were virtually tunnels among the buildings. This Arab arrangement provided maximum protection from the winter rain, the fierce sunshine and the perennial dust storms.

Baghdad had virtually no street in the modern sense. Bazaars were the only straight and rather wide street lines, though they never exceeded 6 metres in width. The city, however, did not have any type of wheeled vehicles before the first decade of the 20th century, and many alley streets were wide enough if two loaded animals could pass each other.

The spatial distribution of bazaars was faithfully interrelated with the distribution of the main mosques, khans, the bridge and the main gates of the city. Traditionally, the bridgeheads were the starting points of bazaars. In al-Rusafah, bazaars headed north towards al-Sarai and Bab al-Sultan (the Sultan Gate or Bab al-Mudham); and also south-east towards the shrine of Sheikh Abdul Qadir al-Qailani, the destination for pilgrims from the Moslam world.

In al-Karkh, the main bazaars headed north-west towards Hillah Gate, and north-west and north towards the residential mahallahs and Kadhimiyah gate. A hierarchy of certain squares can be observed in the traditional city of Baghdad. They are few, but with a valuable socio-economic importance in the life of the city. To understand their spatial distribution one has to consider the overall population distribution, location of mosques and the age of the different parts of the city.

The closeness of houses to the river and the central area is strongly related to the age of residence and to a limited extent to the economic rank of the families. The houses of inhabitants who had lived longest in Baghdad were generally nearest to the bazaar centre, the citadel and the river. Further out from them were houses of either poorer people or of more recent migrants, many of whom still have some village ties. On the outer perimeter were the most recent migrants, whose loyalties were primarily to the large rural clans from which they

had come. On both sides, this outer perimeter was still inside the walls, as were some orchards, cemeteries, ruins and brick kilns, representing typical fringe belt land use, (Fig. 5.21).

Although the traditional town of this period was composed of many semi-independent mahallahs, certain unifying elements can be examined.

Firstly, the city walls which sharply defined the limits of the city providing security to all mahallahs despite the differences of sects, religions, tribes, regions and economic differences. Secondly, the grand mosque (al-Jami al-Kabir) is still a thriving centre for the life of the public. From this mosque the most important political, economic, administrative and social news used to be delivered.

Thirdly, bazaars, sahahs and hammams, all of which were in many ways elements of city unification.

There are not only historical and cultural but also architectural values in the old parts of the city, not so much in single buildings as in the total patterns.

Unfortunately, modern architecture, has not yet come up with equivalent complexes. Alas, many Arab people in Mesopotamia feel "ashamed" of the old mahallahs and want a complete "transformation". This feeling of inferiority and urge for change was probably reflected because they misunderstood civilization by overlooking their own historical development. The Arab world did not appear in history overnight and there are the many old cities to show that.

1. Xavier De Planhol, The World of Islam, (Le Monde Islamique: Essai de Geographie Religieuse), New York (1959) 24 - 25.
2. Al-Hafidh Abi Bakr al-Khatib al-Baghdadi, Tarikh Baghdad, (The History of Baghdad), Cairo (1931); Al-Imam Abi Jafar Muhammad bin Jarir al-Tabari, Tarikh al-Umam wal Muluk, (The History of of Nations and Mediators) Cairo (1939); Yakut al Hamawi, Mujam al Buldan (Encyclopedia of the countries) Beirut (1955); M. Jawad and Susa, Dalil Kharitat Baghdad Qadiman Wa Hadithan, (A Guide to the Ancient and Modern Baghdad), Baghdad, (1958); G. Le Strange, Baghdad - During the Abbasid Caliphate, Oxford 1900; Reuben Levy, A Baghdad Chronicle, Cambridge (1929); Richard Coke, The City of Peace, London (1927).
3. K. Creswell, A Short Account of Early Muslim Architecture, Penguin Books, (1958), pp 161 - 172; Le Strange, op. cit., Map No. 11; N. Maruf, Takhtit Madinat Baghdad (The Planning of the City of Baghdad, Baghdad (1966) Diagram No. 1; Jawad and Susa, op. cit. (1958) 53; M. Jawad and A. Susa, Planning of the City of Baghdad, in its various periods, edited in the Iraqi Engineers Association, in Baghdad, An Illustrated Historical Survey, Baghdad (1969) 21; A. Susa, Atlas Baghdad (Baghdad Atlas), Baghdad (1952), 7; J. Lassner, The Caliph's Personal Domain, The City Plan of Baghdad re-examined, edited in A. H. Hourani and S. M. Stern, The Islamic City, Oxford (1970) pp 108 - 113.
4. A. H. Hourani, The Islamic city in the Light of Recent Research reprinted in A.H. Hourani and S. M. Stern, op. cit., 17.
5. S. A. Eli, The Foundation of Baghdad, reprinted in Hourani and Stern, op. cit. 25 - 51.
6. Al-Khatib, op. cit. 66 - 72.

7. Al-Khatib, op. cit., 1, 72; Jawad and Susa, op. cit. (1969) 20.
8. Al-Khatib, op. cit., 1:72; Al-Tabari, op. cit. 238
9. Al-Tabari, op. cit., 240; Encyclopedia Britannica, iii, 9th edition (1898) 895.
10. Al-Khatib, op. cit., 1:74
11. Abi al-Hasan bin al-Husain bin Ali al-Masudi, Muruj al-Dhahab Wa Madin al-Jawhar (The Meadows of Gold and Minerals of Jewels), Cairo (1964) p. 299 - 300; M. Al-Khudhairi, Muhadharat Fi Tarikh al-Umam al-Islamiyah, (Lectures in the History of the Islamic Nations), Cairo, 10th edition (1376 A.H.) 72.
12. Al-Khatib, op. cit., 1:72 - 74; Le Strange, op. cit. p. 22 - 28.
13. Al-Khatib, op. cit., 1:71
14. Le Strange, op. cit. p. 23 - 28.
15. Shihab al-Din Abu Abdullah Yakut bin Abdullah al-Harawi al-Rumi al-Baghdadi, Mujam al-Buldan, (The Dictionary of the Countries) Leibziq (1866) 460; Jamal al-Din Abu al-Faraj Abdul Rahman bin Ali Inb al-Jawzi, Manaqib Baghdad, (Heritage of Baghdad), Baghdad, (1342 A.H.) 303.
16. Ibn Battutah, Tuhfat al-Nudhar Fi Gharaib al-Amsar Wa A'jaib al-Asfar, (Travels of Ibn Battutah) Cairo (1322 A.H.) 141.
17. T. A. Abdul-Jawad, Tarikh al-Imarah al-Islamiyah, (The History of Islamic Architecture), Cairo (1970) 183; N. Maruf, Mudunon Islamiyah Awjadaha al-Arab (Islamic towns Founded by the Arabs) Baghdad (1964), p. 26 - 29; S. Adel, Al-Aglam Magazine, First year, 4 Baghdad, 30
18. Al-Khatib, op. cit., 1:73, Maruf, op. cit. (1964), Jawad and Susa, op. cit. (1958), 218; J. Lassner, Notes on the Topography of Baghdad, The Systematic Description of the City and al-Khatib al-Baghdadi, Journal of the American Oriental Society, LXXXIII (1963), 458; El-Ali, op. cit. 93.

19. Al-Khatib, op. cit. 5:15
20. Ira Marvin Lapidus, Muslim Cities in the Later Middle Ages, Harvard University Press (1967), p. 6, 114.
21. J. M. Rogers, Samarra, A Study in Medieval Town Planning, reprinted in Hourani and Stern, op.cit., 129.
22. Al-Khatib, op. cit. 1:79 - 80.
23. Al-Khatib, op. cit., 1:73; Le Strange, op.cit. 264, Jawad and Susa op. cit. (1958) 73.
24. R. Wahba, Cairo, Cairo (1963) 27; J. Lassner, op. cit. (1970), 115.
25. Lassner, op. cit. (1970) 115
26. Rogers, op. cit., 114
27. Jawad and Susa, op. cit. (1958) 113; Le Strange, op. cit. 217.
28. Jawad and Susa, op. cit. (1969), 326; M. H. al-Yasin, Tarikh al-Mugam al-Kadhumi (The History of al-Kalhim Shrine), Baghdad, (1967), p. 10 - 12.
29. Jawad and Susa, op. cit. (1958) 327.
30. M.R.G. Conzen, Alnwick, Northumberland, A Study in Town-plan Analysis, The Institute of British Geographers, 27 (1960) 61.
31. P.K. Hitti, The Near East in History (A 5,000 Years Story) New York, London (1960) p. 244 - 248.
32. Jawad and Susa, op. cit. (1958), 327.
33. I. A. Rauf, Madaris Baghdad Khilaf al-Ahd al-Abbasi (Baghdad's Schools during the Abbasid Period), Baghdad (1966) p. 220 - 226.
34. Lieut. Colonel Chesney, The Expedition for the Survey of the Rivers Euphrates and Tigris, London, 2 (1850) 459;
George E. Kirk, A Short History of the Middle East, London (1948) 27.

35. P. K. Hitti, History of the Arabs, London, 4th edition, (1949) 305.
36. Lewis Bernard, The Islamic Guilds, Economic History Review, VIII (1937) 23.
37. Dharif al-Adhami, Mujaz Tarikh Baghdad Qadiman Wa Hadithan (A Summary of the History of Ancient and Modern Baghdad) Baghdad (1926) 128.
38. H. I. Hasan, Tarikh al-Islam al-Siasi wal Dini Wal Hadhari Wal Ijtimai (The Political, Religious, Cultural and Social History of Islam) Cairo, 7th edition, 2 (1964) 309.
39. El-Ali, op. cit. 1: 89 - 95.
40. Joram Kronic, Architectural Traditions and New Architecture of Iraq, Sumer, A Jurnal of Archaeology and History in Iraq, VIII (1962) 34.
41. A. Al-Duri, Baghdad, Encyclopedia of Islam, (1960) 899.
42. Al-Khatib, op. cit. 1:117 - 120; Al-Adhami, op. cit. 20 - 22; Jawad and Susa, op. cit. (1969) 35 - 39; al-Duri op. cit., 890; M. S. al-Husaini, Imarat Baghdad, (Architecture of Baghdad) Baghdad (1930) 30.
43. Al-Khatib, op cit. 1:107-109
44. T. al-Rawi, Baghdad, Madinat al-Salam (Baghdad, the City of Peace) Igra Series, No. 27, Cairo (1944) 34; Coke, op. cit. 48.
45. Planhol, op. cit. 21
46. Al-Rawi, op. cit. 35
47. A. Susa, Faiadhanat Baghdad Fi al-Tarikh (The Floods of Baghdad in History) Baghdad (1963) 224 - 226.
48. Coke, op. cit. 92

49. Judith A. Brown, A Geographical Study of the Evolution of the Cities of Tehran and Isfahan, Ph. D. Thesis, Durham University (1965) 347.
50. Coke, op. cit. 45.
51. Susa, Op. cit. (1963) 1:227-230
52. Sihrab, Kitab al-Aqalim al-Sabah Wa Nihaiyat al-'Imarah (The Book of the Seven Regions), Vienna (1929) 118 - 130.
53. M. Makiah, Tatwar Fann al-'Imarah in Baghdad (The Evolution of Building Architecture in Baghdad) printed in the Iraq Engineers Association, op cit. (1969) 214.
54. A. Susa; Faiadhanat Baghdad Fi al-Tarik (The Floods of Baghdad in History), Baghdad, 2 (1965) 359.
55. P. K. Hitti, op. cit. (1960) 294.
56. Jawad and Susa, op. cit. (1969) 229 - 230; al-Rawi, op. cit, 48.
57. A. al-Hasani, Al-'Iraq Qadiman Wa Hadithan (Iraq, Ancient and Present), Saida, second edition (1956) 65, al-Duri op. cit. 900.
58. Abi al Husain Muhammad Ibn Ahmad Ibn Jubair al-Kinani al-Andalusi al-Belansi, Rihlat Ibn Jubair (Travels of Ibn Jubair), Leiben, 8 (1907) 238.
59. Al-Adhami, op. cit., 56; al-Duri, op. cit. 900
60. A. Al-Alawghi, Hukumat Baghdad Baina Tasisiha wal 'Ahd al-Jumhuri (The Government of Baghdad between its Foundations and the Republican Era) Baghdad, (1962) 9.
61. Jawad and Susa, op. cit. (1969), 91
62. Dairat al-Marif al-Islamiyah (Encyclopedia of Islam) 4, 11; Jawad an Susa, op. cit. (1969), 41.
63. Conzen, op. cit. (1960) 61.

64. Hitti, op. cit. (1960) 294; Jawad and Susa, op. cit. (1969) 43.
65. Jawad and Susa, op. cit. (1969) 43.
66. Conzen, op. cit. (1960) pp. 91, 127
67. Al-Sheikh M. Hasan al-Yasin, Tarikh Masjid al-Kadim (the History of al-Kadim Shrine) Baghdad (1967) 27.
68. Al-Imam Abi al-Abbas Ahmad bin Abdul Mumin al-Qaisi al-Sharishi, Sharh al-Magamat al-Haririyah, (The Explanation of the Harirs' Poems) Cairo, 1 (1888), 186.
69. Susa, op. cit. (1952) 11.
70. Levy, op. cit. 196.
71. See I. A. Rauf, op. cit. (1966).
72. M. R. al-Feel, The Historical Geography of Iraq between The Mongolian and Ottoman conquests, 1258 - 1538 A.D., A Thesis submitted to the University of Reading in April (1959) for the for the Degree of Doctor of Philosophy, 421.
73. Al-Hasaini, op. cit. 87; Jawad and Susa, op. cit. (1958) 331 - 332, al-Duri, op. cit. 902.
74. Yakut, op. cit. 4 - 17; Le Strange, op. cit. 161.
75. Ibn Jubair, op. cit., . 196 - 208.
76. Yakut, op. cit., 4 : 252.
77. Levy, op. cit., 229.
78. Abbas al-Azawi, Tarikh al-Iraq Bain Ihtilalain, (The History of Iraq between two Conquests) 8 volumes, Baghdad (1965) 2:105.
79. Jawad and Susa, op. cit. (1958) 215.
80. Coke, op. cit. 125; Jawad and Susa, op. cit. (1958) 331.
81. Jawad and Susa, op. cit. (1958) 187.
82. Susa, op. cit. (1963) 232; al-Duri, op. cit., 901

83. N. Maruf, al-Madrasah al-Mustansiriyah (Al-Mustansiriyah school) Baghdad, 1935; Directorate General of Antiquities, the Mustansiriyah College, its History and Architecture, Baghdad (1960).
84. Al-Duri, op. cit. 902; Jawad and Susa, op. cit. (1958) 185. Fuad Baali, Relation of the People to the land in Southern Iraq, University of Florida Monograph's 31 (1966) 11.
85. Muhammad bin Ali bin Tabatba Ibn al-Tagtagi, Tarikhal-Fakhri (The History of al-Fakhri) Cairo (1923) 130.
86. Madam Dila Vouir, Travels of Madam Dila Vouir to Kildah and Iraq, 1299/1881; Translated into Arabic by A. Al-Basri, Baghdad (1958) 40-48.
87. Ibn. Battutah, op. cit. 138 - 142; Jawad and Susa, op. cit. (1958) 89 - 90.
88. Carleton S. Coon, Caravan: The Story of the Middle East, London, (1952) 145.
89. Planhol, op. cit. 8
90. Ibn Battutah, op. cit. 164 - 169.
91. Hamad Allah al-Mustaufi, Nuzhat al-Qulub (The Picnic of Hearts) London (1919) 40 - 42.
92. Ibn Battutah, op. cit. 164 - 169.
93. Dr. Kadhim al-Janabi, Manarat Sug al-Ghazil, (The Minaret of Sug al-Ghazil), Baghdad (1966)
94. Naji al Asil, Al^A-Thar al-Islamiyah Fi Baghdad (Islamic Archaeology in Baghdad) Printed in, Ibn Sina Committee, A Historical Guide for the Archaeological Sites in Iraq, Baghdad (1952) 8 - 11,
95. Al-Adhami, op. cit. 157.
96. Coke, op. cit. 172; A. Susa, Rai Baghdad Qadiman wa Hadithan, (The Irrigation of Baghdad, Old and Present), printed in Iraqi Engineers Association, Baghdad (1964) 117.

97. Susa, op. cit. (1963) 1:241; Jawad and Susa, op. cit. (1958) : 219-222.
98. Jawad and Susa, op. cit (1958) 63.
99. Sir Thomas W. Arnold, Painting in Islam - study of the place of Pictorial Art in Muslim Culture, Oxford, 1928. Majallat Ahl al-Naft, (The Petroleum Magazine) 11, June (1945); Jawad and Susa op. cit. (1969) 63.
100. Al-Duri, op. cit. 902; Al Azawi, op. cit. 3:79.
101. Coke, op. cit. 180
102. Jawad and Susa, op. cit (1958) 333.
103. Charles Issawi, The Economic History of the Middle East, 1800 - 1914, (A Book of Readings edited by Charles Issawi), Chicago & London, (1966) 130.
104. Stephen Homsley Longrigg, Four Centuries of Modern Iraq, Oxford, (1925) 18, Al-Adhami, op. cit. 171.
105. Al-Asil, op. cit. 12.
106. Dr. K. M. Al-Shibi, Al-Fikr Al-Shii wa al-Nazaat al-Sufiyah Hatta Matla' al-Qarn al-Thani Ashar al-Hijri (The Shiah Beliefs and the Mystic Trent' up to the Beginning of the 12th Hijrah Century) (Baghdad
107. Susa, op. cit. (1952) Susa, op. cit. (1963) 1:248. (1966)415.
108. Susa, op. cit. (1962) 1: 221.
109. Susa, op. cit. (1963) 1: 221; Jawad and Susa, op. cit. (1958) 100 - 104.
110. Jawad and Susa, op. cit. (1958) 330.
111. Longrigg, op. cit. (1925) 47
112. Al-Asil, op. cit. 12.
113. Al-Azawi, op. cit. 5, p 128 - 133.
114. S'uad H. al-Umari, Baghdad as it was described by Foreign Travellers, (Translated into Arabic From German), Baghdad (1373/ 1954) p 15 - 18.

115. Al-Wardi, op. cit. 1 ; 69.
116. Longrigg, op. cit. (1925) 74.
117. Al-Duri, op. cit. 906.
118. Ira Marvin Lapidus, Muslim Cities in the later Middle Ages, Harvard (1967) pp 28 - 48,66.
119. Dr. Ali al-Wardi, Social Aspects of the Iraqi Modern History, Baghdad (1969) 165, 2, (1971) 214; Sulaiman Faiq Bek, The History of Baghdad, Translated into Arabic by: M. K. Nawras, Baghdad, 1962, pp 10 - 12.
120. G. Hamdan, The Pattern of Medieval Urbanism in the Arab World, Geography, 47 (1962) 123.
121. A. H. Al-Sammarrat, Transportation in Iraq, Ph. D. Thesis submitted to Reading University (1968) 47; M. E. Yapp, The Establishment of the East India Company Residency at Baghdad, 1798 - 1806, Bulletin of Schools of Oriental and African Studies, 30 (1967) 53.
122. Jean-Baptiste Tavernier, Travels Through Turkey into Persian and the East Indies, Finished in 1670. Translated into English by J.P., London (1678) : 80 -84.
123. A. Al-Karamally, The Flooding of Baghdad, al-Mashriq, Magazine, Beirut, 10th year (1907) pp. 651 - 656 and : 738 (in Arabic)
124. Longrigg, op. cit. (1925) 137.
125. Abbas al-Azawi, op. cit. 5 : 137.
126. Coke, op. cit. 216
127. M. Niebuhr, Travels Through Arabia and Other Countries, 2 v. Liban (1972), Translated into Arabic by Dr. M. H. al-Amin, Baghdad (1965) . . . 60 - 63.
128. Susa, op. cit. (1952) 14.

129. Al-Umari, op. cit. 42; Susa, op. cit. 1:252-3; Jawad and Susa, op. cit. (1969) . 211 - 212.
130. Al-Umari, op. cit., 22.
131. Al-Wardi, op. cit. (1969) 1 : 89.
132. Abraham Parsons, Travels in Asia and Africa, London (1808)
116 - 118, 125, 127.
133. Longrigg, op. cit. (1925) 254; Yapp, op. cit. 323.
134. K. J. Rich, Travels of Mr. Rich in Iraq in 1820, translated into Arabic by: Baha al-Din Nuri, Baghdad (1950) 20.
135. G. Geary, Through Asiatic Turkey, London (1878) 267 - 269.
136. Issawi, op. cit. 136.
137. Ahmad al-Husajni, Known as al-Munshi al-Baghdadi, Rihlat al-Munshi Fi al-Iraq (Travels of al-Munshi in Iraq) written in 1822, Translated into Arabic from Persian by: A. Al-Azzawi Baghdad (1948) 20- 24; Jawad and Susa, op. cit. (1969) 7.
138. Al-Wardi, op. cit. (1969) 1:189.
139. Robert Ker Porter, Travels in Georgia, Persia, Armenia, Ancient Babylonia, London, 11 (1822) 244.
140. Al-Munshi al-Baghdadi, op. cit. : 20 - 24.
141. Conzen, op. cit. (1960) 11.
142. Sheikh Uthman al-Waili, Khamsun Wa Khamsuna Aman Min Tarikh al-Iraq (Fifty Five Years of the History of Iraq) 1188 - 1242 A.H., Summarized by Sheikh Amin Bin Hasan al-Hulwani al-Madani, Cairo, 1371 A.H.; Longrigg, op. cit. (1925) 266.
143. Chesney, op. cit. 599.
144. Commander James Felix Jones, Selected from the Records of the *Records of the* ^{Government} Bombay (1857) . 309 - 310.
145. Al-Umari, op. cit. 72.

146. Longrigg, op. cit. (1925) 266.
147. Jones, op. cit. : 309 - 310.
148. J. Bailie Fraser, Travels in Kurdistan, Mesopotamia, etc.
London (1834) pp 217 - 220.
149. J.S. Buckingham, Travels in Mesopotamia, London (1827) 233.
150. Chesney, op. cit. 599.
151. Issawi, op. cit. 147.
152. Coke, op. cit. 272.
153. Coke, op. cit. 263.
154. Al-Umari, op. cit. 42.
155. Jones, op. cit.

PART IV

Baghdad's Modern Development I

CHAPTER 6

The Second Morphological Phase: 1869-1920

Introduction:

The analysis of the plans and structural evolution of modern Baghdad has been divided into four well defined morphological phases. These findings rely on the fact that each period has its own distinct morphological elements. These elements are the building fabric, mainly house units, and the street system. They have evolved to meet the socio-economic and technological development that the country was passing through.

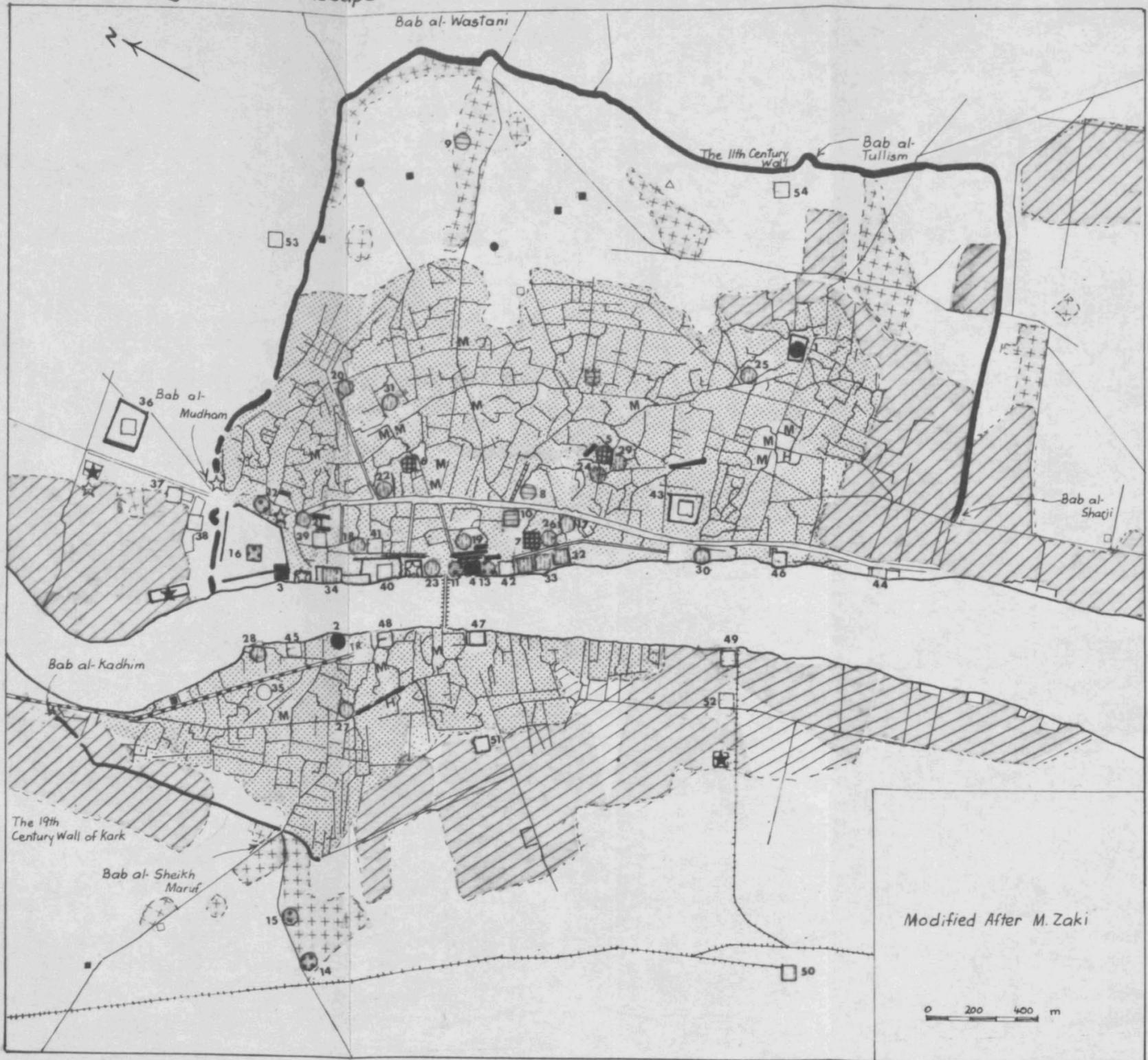
The divisions were based upon the intensive field work in a city where the writer has lived for more than 16 years. It is safe to assume that almost none of the morphological elements of any one period can be found in the other periods. This has helped in many ways to properly trace the evolution of the city of Baghdad. Probably it is also applicable to many other Arab towns, regardless of their history and location.

These periods are:

- a. The Second morphological phase, 1869 - 1920.
- b. The Third morphological phase, 1920 - 1936.
- c. The Fourth morphological phase, 1936 - 1956.
- d. The Fifth morphological phase, 1956 - onwards.

From the historical section (the first morphological phase), one saw the history of the City of Baghdad, and its part in shaping its physical structures. The cumulative destruction, heaped on by centuries of neglect and abuse by successive authorities, reduced the city to its shapeless character. The City of Baghdad, however, did not decay completely, as its prime functions had not been

Fig. 1 Baghdad's Townscape in 1919



Period Features
Abbasid Period

- Religious Buildings
- Sheikh Abdul Qadir Shrine
- Public Buildings
- 3 The Abbasid Palace

ILKhanid Period

- Religious Buildings
- 5 Suq al-Ghazil Minaret
- Public Buildings
- 7 Khan al-Tamr

Jalayrid Period

- Religious Buildings
- 8 Mirjan Mosque
- Public Buildings
- 10 Khan Mirjan

Dark Period

- Religious Buildings
- 11 Asifiyah Mosque
- 13 Al-Khaffafin Mosque
- 15 Sheikh Maruf Tomb
- Public Buildings
- 16 The Citadel (Al-Qalah)

Ottoman Period

- Religious Buildings
- 17 Al-Khasaki Mosque
- 19 Al-Qiblaniyah Mosque
- 21 Ahmadiyah Mosque
- 23 Al-Wazir Mosque
- 25 Siraj al-Din Mosque
- 26 Adiliyah Mosque
- 28 Khid Ilias Mosque
- 30 Said Sultan Ali Mosque
- Public Buildings
- 32 The Court
- 34 Al-Sarai
- △ Brick Works

The Second Morphological Phase 1869-1920

- Religious Buildings
- 35 Sit Nafisah Mosque

- 2 Qamariyah Mosque
- 4 Al-Mustansiriyah
- 6 Aguliyah Mosque
- 9 Al-Sahrawardi Tomb
- 12 Muradiyah Mosque
- 14 Zubaidah Tomb
- 18 Al-Surai Mosque
- 20 Al-Fadhil Mosque
- 22 Haiderkhanah Mosque
- 24 Churches of Armenians American and Latin
- 27 Sheikh Sandal Mosque
- 29 Suq al-Ghazil Mosque
- 31 Abb Afandi Mosque
- 33 Khan al-Oftehdar
- 34 Khan al-Masbaghah

□ Public Buildings

- 36 Al-Khaiyalah Barracks
- 38 Military Barracks
- 40 Al-Qishlah
- 42 Al-Musbaghah Gawah
- 44 The British Residency
- 46 The Russian Residency
- 48 Al-Sif the Chief Khan in al-Karkh
- 49 The River Railway Station
- 51 The Carriage Khan, Terminal of Hillah and Karbala Lines
- 52 The Main German Building
- 53 Baghdad North Railway Station
- 54 Baghdad East Railway Station
- 37 Khan Bob al-Mudham
- 39 Central Post Office
- 41 Dar al-Baladiyah
- 43 Al-Abbakhanah Industrial Area
- 45 The American Residency
- 47 The Persian Khan
- 50 Baghdad West Railway Station

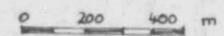
- Through Streets
- Tramway Line
- Police Station

- ★ Hospitals
- ☆ Schools
- Tannery and Slaughter Houses

Features not Tied to any Particular Period

- Alley Ways
- Bridge
- Bazaars
- M Mosques
- Residential Land Use
- Orchards
- Cemeteries
- Waste Land
- H Hammams

Modified After M. Zaki



removed, but it did become a mere vestige of the great old city of the First Abbasid period. It did not possess a single building from that first period (762 - 946) (Fig. 6.1). The few remains of the Abbasid period, are from later centuries. With few exceptions almost all public and private buildings in existence and use belong to the 19th century.

The past survives in the type or design of existing Baghdadi buildings rather than in their actual physical structure. The method of construction survived unchanged. Since the 11th century, the design of private and public buildings in Baghdad have not changed -- plans have persisted in their traditional shape and in harmony with the street system and socio-physical structure of Baghdad. Consequently, all the buildings built before 1920, help to link Baghdad with its past. The town plan and physical stagnation of the city over this long period can be explained by the fact that the whole spectrum of the socio-political and economic structure of society was also stagnating. The same principles of family ties, tribalism and religious affiliations noticed in the 13th century after the Mongol invasion, have remained the major determinants in Arab culture. The needs of traditional life and the standard of technology were almost the same. International influences were negligible. This was naturally reflected in the component elements of Baghdad's townscape. Baghdad's response to the progress of time was shown in the town plan where some new streets emerged, and also on the building fabric by way of modification or replacement.

Modern Baghdad:

During this period (51 years), Baghdad has exercised two modes of development, i.e. gradual and step-wise development. The former

was achieved in longer periods of time than the latter. The main reason for such irregular development can be attributed to the type of governors during this period. Governors were free to take all sorts of decisions. Consequently, if they had any contact with the western world, they might have contributed something to Baghdad's development.

The reign of Midhat Pasha (1869 - 1871)¹ witnessed an increased tempo in development, which became even faster during the British occupation. The city in effect entered a new era of its evolution. The improvement plans of Midhat Pasha, as well as other developments introduced in this period prepared the city for a great change, but the change itself was only in its incipient phases. This period 1869 - 1920 can be virtually considered as a forerunner of subsequent morphological phases. It is a transitional phase between the "medieval" and "modern" periods in the urban history of Mesopotamia. It is thus logical to begin the study of the structural evolution and pattern of the present city with this period.

In his code of 1858 Midhat Pasha organised for the first time a system of land registration, in an attempt to put an end to tribal lawlessness. As a consequence a land registry (Tapu) was established. Lands were distributed in blocks to the tribes, but not to individuals. Every piece of land became the property of the whole tribe. As a result, sheikhs were able to acquire all these lands illegally, leaving their tribal members as labourers (fallahin) in their lands. This scheme did not solve the tribal problems which continued to disturb the life of the country and the tribal sheikhs were not subdued. Some of the influential citizens of urban places through improper ways became big absentee landlords.

This led to migration to urban areas in subsequent period.²

Our period is characterised by the appearance of European influence in the life and structure of the city and the country as a whole. The 'pseudo-westernized' governors, such as the aforementioned Midhat Pasha and Nadhim Pasha (1909), the increasing number of European businessmen, and foreign residencies contributed to the development of the City. Baghdad in this period had five European residencies, the Russian, the German, the French, the American and the British. They developed their buildings on modern lines, these buildings were primarily located in the southern part of the city on the al-Rusafah side along the Tigris.

Educational establishments, Christian missions, new systems of communication, all contributed to the modernizing processes.

After the beginning of the new irrigation scheme (1909) and the German railway from the Baghdad end, British and German interest in Mesopotamia rose sharply.

Railroads, agriculture, oil exploitation and its strategic geographic situation were the main interest of the foreign powers in the 20th century.³

During this period, Baghdad saw the first publishing house, the first newspaper "al-Zawra" and the first junior girls school.⁴ The Arabic language was adopted instead of Turkish. During the Ottoman occupation Arabic had been not only an unofficial but actually a forbidden language. The modern developments in Baghdad in this period were connected with requirements and changes in the military, educational, industrial, administrative and public health spheres, in transportation and in religious land uses. These functions revolutionized the central

and fringe belt evolution of the city. They led to the development of many new buildings, such as barracks, schools, factories, administrative buildings, hospitals, post offices, and mosques.⁵

For the first time in its history Baghdad had a municipal council. This has reinforced the significance of the traditional administrative centre. Al-Sarai, now housing the ministries of Finance and Justice,⁶ the central post office⁷ and Dar al-Baladiyah (the building of the municipality) were built in this period. They added to the importance of the central area and at the same time were new arrivals in the townscape of the city. At the same time the telegraph was extended to all the larger towns of Iraq. In the same area several military and civil schools were established. The literary rate among townspeople rose from $\frac{1}{2}$ percent in 1850 to 5 - 10 per cent in 1900.⁸

In 1913 Baghdad had twenty-four official schools, out of which six were for non-Moslems. The number of students were 3,537.⁹

Concurrently with this central development, the stagnant fringe-belt commenced its augmentation and consolidation¹⁰ phase which marks the modern growth of the city. Fringe-belt development was inspired mainly by military, health, and industrial developments. These functions were seeking peripheral sites where the land was cheaper and in ample supply. It is worth mentioning here that although some extramural developments have occurred, the intramural areas were not yet filled up (Fig. 6.1). The military functions are significant. By 1917, Baghdad was captured by 40,000 British troops. The city became the army headquarters of the new military force. The first compulsory military law had been passed in the years 1869 - 1871.¹¹ Most of the new military constructions had either proximal or distal extramural location, such as al-Khaiyalah barracks for the former and al-Hinaiidi Barracks to the south of the city, near Diyala river, for the latter. Baghdad had suffered physically from the destructions

done by the retreating Ottoman army. Public buildings had been wantonly damaged. The pontoon bridges of Baghdad and Diyala river some 30 kms south of Baghdad were destroyed. The Bab-al-Tullisim which had an inscription from the year 1220 was also blown up with the ammunitions stored in it. The First World War and its aftermath had practically revolutionized the life and development of Baghdad especially on the East Side, al-Rusafah. The new military constructions continued as "distal extramural" elements until the 1950's when they began to integrate more closely with the developing Inner Fringe Belt.¹² Al-Rashid (al-Hinaidi) camp which was connected with the city by rafts, is now engulfed by recent development. A military store upstream of the entrance to al-Khir canal was built, the site is now a well developed residential area of al-Qadisiyah. The British army had supplied the city with electricity.¹³

The health services had added to fringe-belt development. The proximal extramural location of al-Majidiyah hospital represents the major medical development in the city. Beside this hospital several khans and schools were developed extending the fringe-belt further to the north (Fig. 6.1). Industrial development has added to central and fringe-belt development. The Abba Khanah area, near the mosque of Sayid Sultan Ali, became the main modern industrial section of the city. A military clothing factory and a local generating station for electric light were built in al-Abba Khanah. The great iron chimneys of the latter establishment rose high above the many minarets and formed a familiar landmark of the neighbourhood. The land here was state-owned in relatively peripheral location. Some fringe-belt developments inspired by industrial progress occurred in Kadhimiyah.

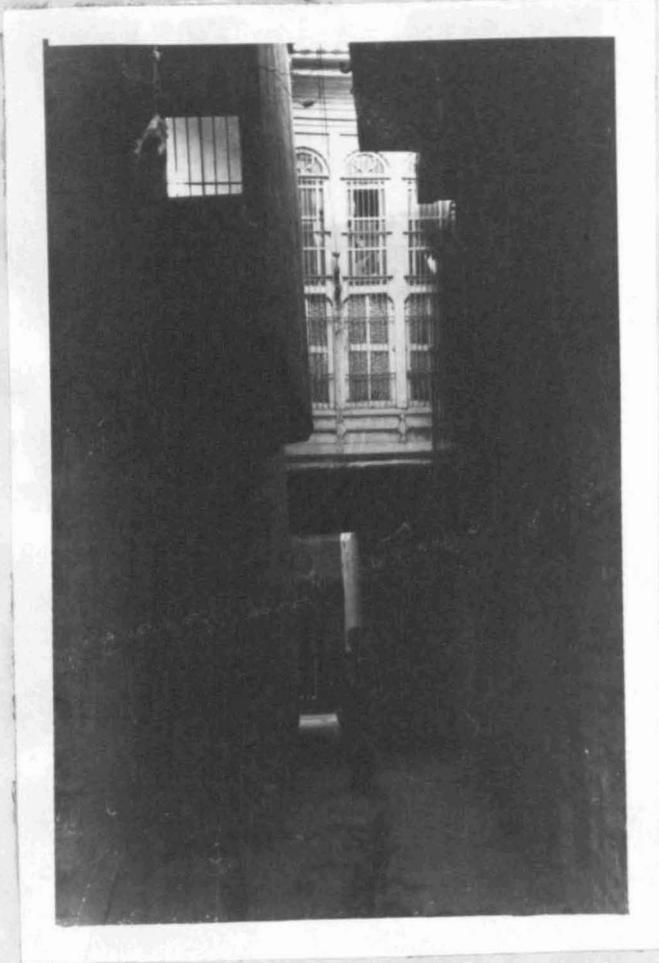
A tanning and leather works were introduced in al-Dabbagh Khanah (tannery) at Kadhimiyah. Until recently, goat and sheep hides were stretched to dry on the walls of the houses of this peripheral mahallah.

Despite the aforementioned industrial establishments, the pace of industrial growth in the city was very slow. Most of the other industrial firms in the period 1869 - 1920 were small and operated on traditional lines. Among these industries were silk and cotton weaving, carpentry, jewellers' works, coppersmiths and the like. Most of these traditional industries were located either in the bazaar areas or contiguous to them.¹⁴

In addition the growth of transport has influenced fringe development. Between 1914 - 1920, Baghdad was connected by a metric-gauge railway. The introduction of railways had affected the evolution and prosperity of the city, which then had three railway stations, two of which were extramurally located. These railway stations soon became nuclei for further industrial growth. Baghdad West Railway Station in particular was the main fringe-belt development exercised by the city.

During this period and following the British occupation, al-Awqaf department, (Dept. of Religious Endowments)¹⁵ was established. Since then, as will be seen in this study, it has had an influence on the development of the city. The department owns many buildings and considerable land in the urban and rural areas. Al-Awqaf administration includes not only the staffing and maintenance of buildings, but also the managements of the funds that support these operations. Its morphological influence on Baghdad's townscape is paramount. This is owing to the construction of buildings throughout the city, mainly for rent purposes.

Fig. 6.2



a. A zuqaq in al-Rashid street area. Many of Baghdad's zuqaqs afford maximum protection against direct sunshine.



b. The break-through street of al-Rashid, the first street in Baghdad's history suitable for traffic, with Baghdadi arabanuhs.

Street System (Fig. 6.1)

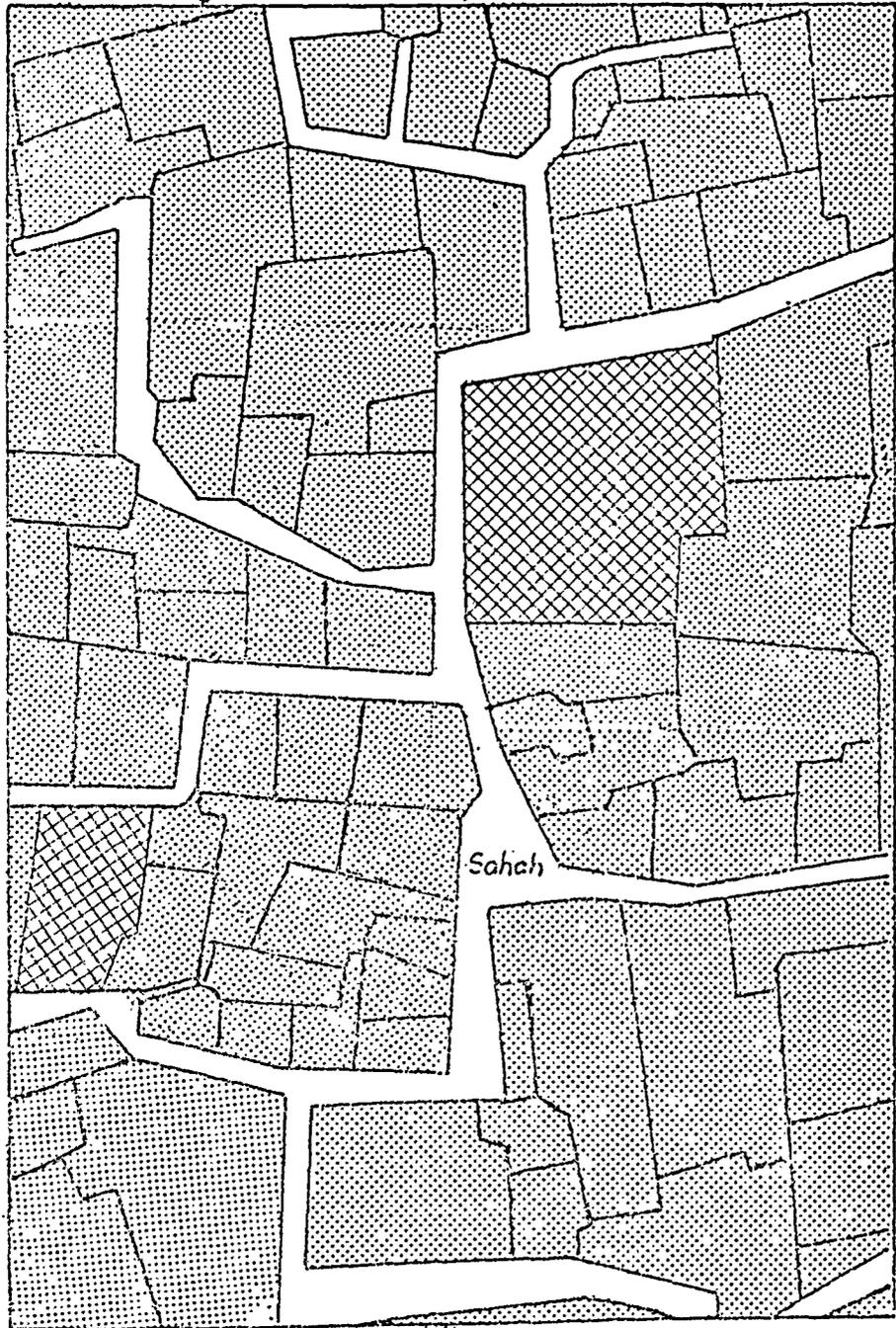
The city was a bewildering maze of narrow, and in many cases characterless lanes and alleyways (zuqaqs). Up to 1916/1917, streets continued to fulfil the needs of pedestrians, animals and to a limited extent carriages. Such streets create a much better community feeling as they are quiet and shaded for the greater part of the day.

Baghdad zuqaqs had grown in stages, ramifying often into secondary zuqaqs, many of which are culs-de-sac. They did not conform to any geometric pattern. At the base of houses, zuqaqs, are not more than 3 m broad; while at the top, because of projecting windows they are almost closed. This pattern achieved the maximum protection against winter rain and the unbearable summer sunshine* (Fig. 6.2). The social structure of society plays a great part in this pattern. Members of a particular tribe, clan or sect, or groups of people of the same geographic origin grouped themselves along a narrow twisting zuqaq. In many cases they developed culs-de sac for security and privacy.

Despite the establishment of the municipal council, Baghdad grew without any preconceived order. Encroachment on to the narrow alleyways, although presumably not allowed, did in fact happen. For example one could acquire property simply by occupying it for a certain length of time (varying according to Islamic law). The absence of an effective system of fines and damages encouraged laxity and as long as people could make their way through the public road, no objection was raised to the encroaching buildings. This in turn resulted in the irregular narrow street pattern. Traditionally

* More details about the zuqaq system are given in Ch. 16.

Fig.6.3 Typical Mahallah Centre with a Sahah (Square) and Neighbourhood Mosques (Fadhi, Mahallah) Rusafah



 Courtyard Houses  Masjids

0 11 22 33 44 55 m

in Arab society, an existing occupant has first option in purchasing adjacent land,¹⁶ which brought about an intensification of already established tribal patterns.

The main zuqaqs in the residential areas of Baghdad are usually orientated towards the bazaars and mosques. This can be observed in virtually every Arab town (Fig. 6.3).

In such a labyrinthine town the stroller can discover a pleasing architectural feature at each turn. Here an artistically formed door, there a courtyard, decorated by interlacing patterns, picturesque gargoyles lining the top of a white or yellow wall, geometric designs with Arab motifs decorating the Shanashil/^{of} ancient monuments which are occasionally seen. Sahahs, inside mahallahs are full of life and attractiveness (Fig. 6.3). Baghdad's layout in effect was not compatible with the demands of modern life. It was, as it is now, a pre-industrial city, a fact which expresses itself in the patterns of its buildings which embodied different functions. Some European towns, conquered at an earlier time by the motor vehicle were better supervised and generally faced less trouble compared with the maze of Baghdad which called for something like a surgical operation. It was thought necessary to cut Baghdad to the very bone, or failing that, to build a new one beside it. This has led to the construction of wild 'break-through' streets. Only after 1865 did Baghdad maintain regular services of arabanahs (horse drawn carts) which connected the city with the outlying centres (Fig. 6.4).

The internal reorganization of Baghdad was approached by sudden measures which led to the creation of a few main street lines. At al-Karkh, a new break-through street had been carved through the tightly built parts, starting from the vicinity of Bait al-Nuwab,

Fig. 6.5 Suq, Hamadah with its Alwabs

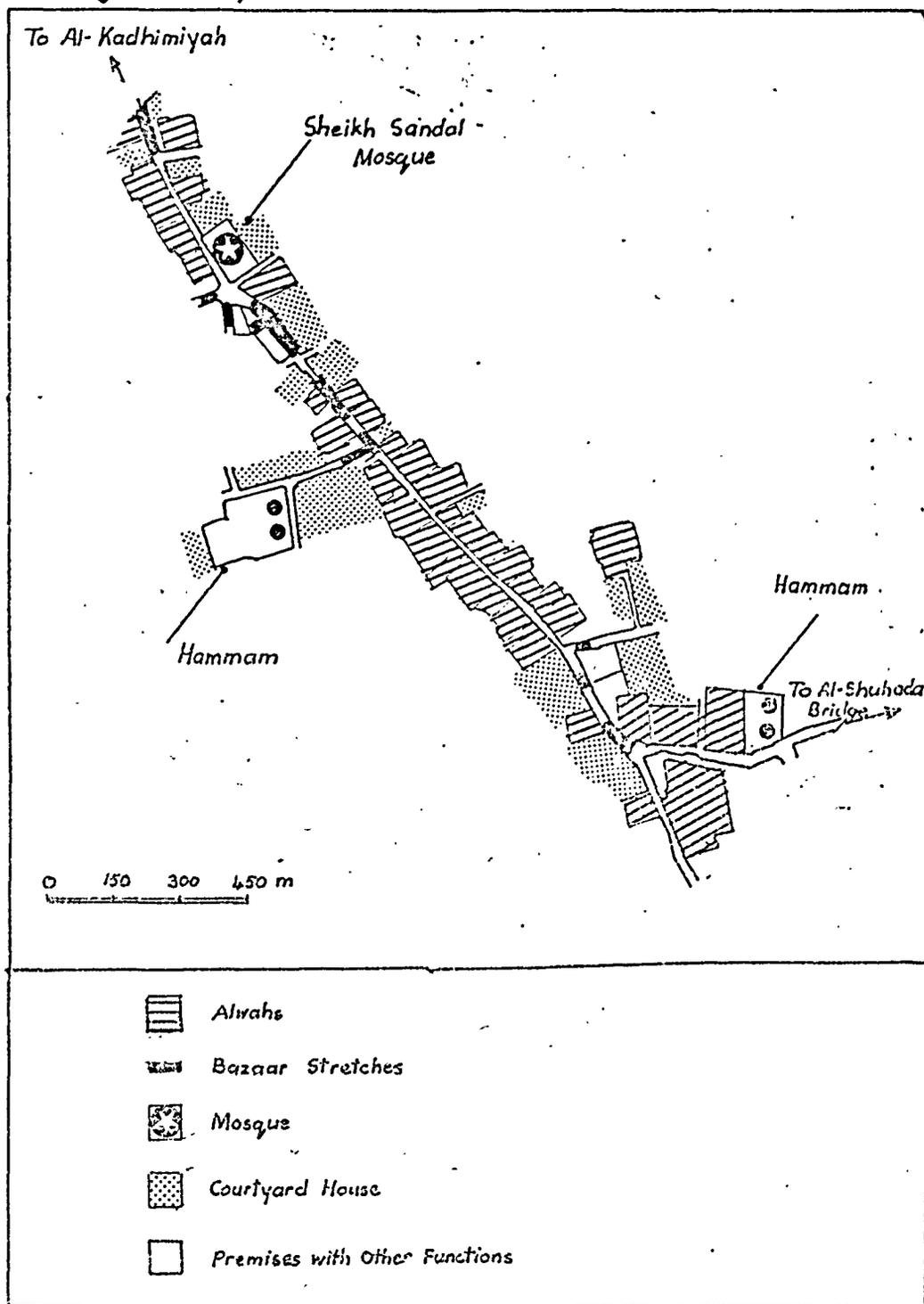


Fig. 6.4



a. Baghdad - Kadhimiyah horse-drawn tramway at al-Karkh



b. Another type of passenger conveyance between Baghdad and other towns, used up to the 1920's

north of the bridgehead to al-Kadhimiyyah gate, and terminating at al-Kadhimiyyah. This street was cut between 1869 - 1871.¹⁷ Its construction was based on a purely personal decision of the westernized Wali. There were no clear-cut municipal laws enabling the authority to fulfil such costly schemes. However, according to Islamic law, the affected individuals must agree first and should be compensated fairly. The new road at al-Karkh carried the newly introduced horse-tramway (Fig. 6.4a) carrying the heavy pilgrim traffic between Baghdad and al-Kadhimiyyah, its holy suburban settlement. The tramway continued to function for about seventy five years and was dismantled in 1946.¹⁸ From then to the 1930's al-Karkh had only two major streets. The second being the oldest, is the still existing Suq Hamadah bazaar (Fig. 6.5). It starts from the bridgehead and converges with the tramway road to the south of al-Kadhimiyyah Gate. This bazaar is two fold functions residential and commercial. The main very carefully designed alwahas (grain warehouses) line it on either side. It was the main route for camel caravans and serves a wide desert region in the western half of Mesopotamia. Even now many of its traditional shops specialize in bedouin and rural commodities. The tramway road influenced land values and building development along its sides, owing to its attraction for new land uses, mainly commerce and craft manufacturing. The hidden mosque of Sit Nafisah, (Fig. 6.1) in the same mahallah emerged on this line, dominating its skyline. The pattern of al-Karkh was therefore influenced by the creation of this road. Al-Kadhimiyyah on the other hand had been revolutionized both in function and form by this tramway. It had been a rather secluded township. Now the tramway added to its religious and commercial evolution. The tramway terminus in al-

Fig. 6.8b The traditional centre of Baghdad in 1962/63
(Directorate General of Surveys)



Fig.b.8a The Central Bazaar Area

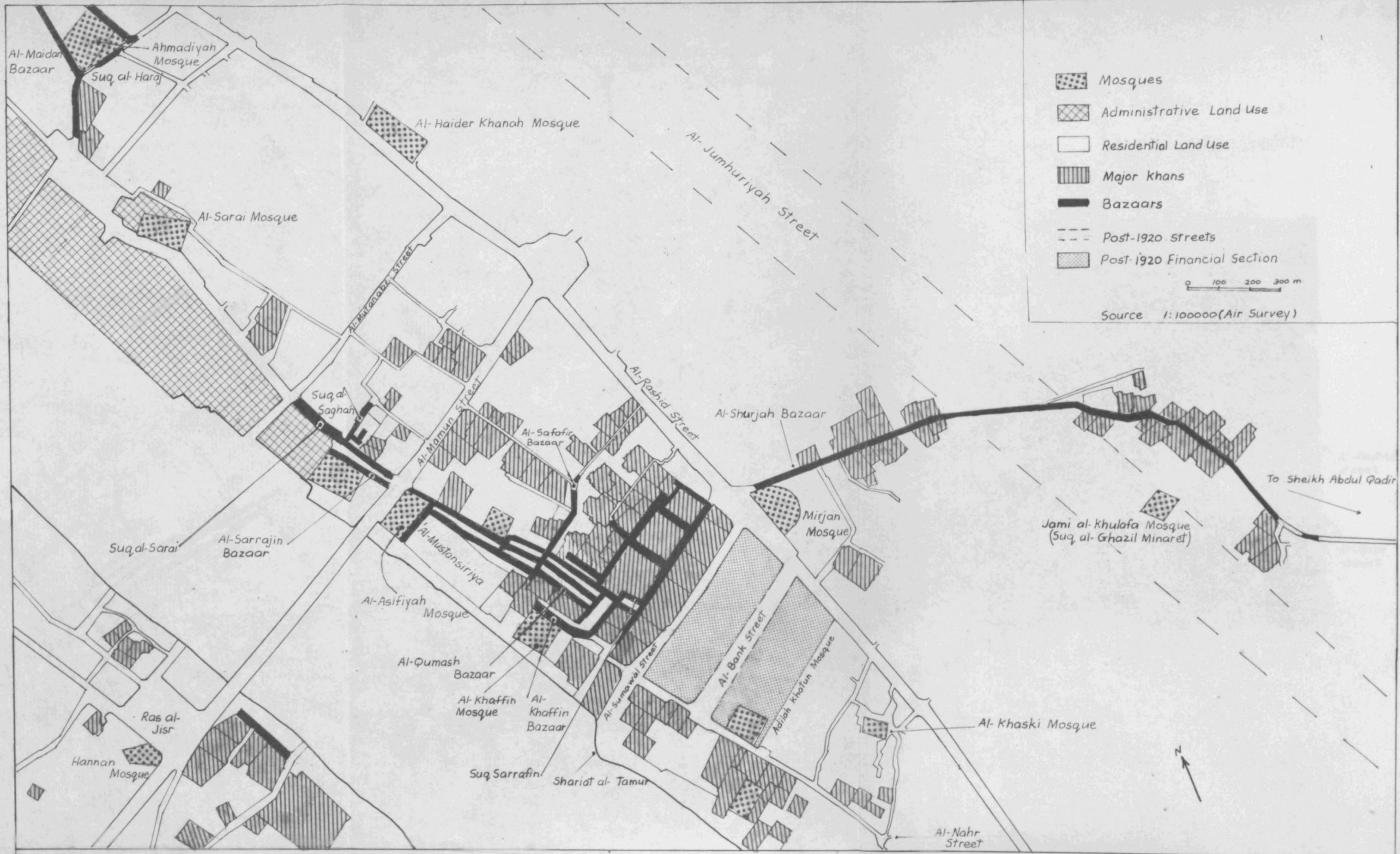


Fig. 6.7



- a. The old pontoon bridge substituted by al-Shuhada Bridge in 1939-41. A sifiyah Mosque to the right and al-Wazir Mosque to the left. Also to the left a khan and a gahwah.



- b. Al-Nahr street area in the foreground looking south-east with part of the modern business core beyond.

Fig. 6.6 Al-Kadhim Shrine in Kadhimiyah looking north-west

Al-Istirbadi Bazaar



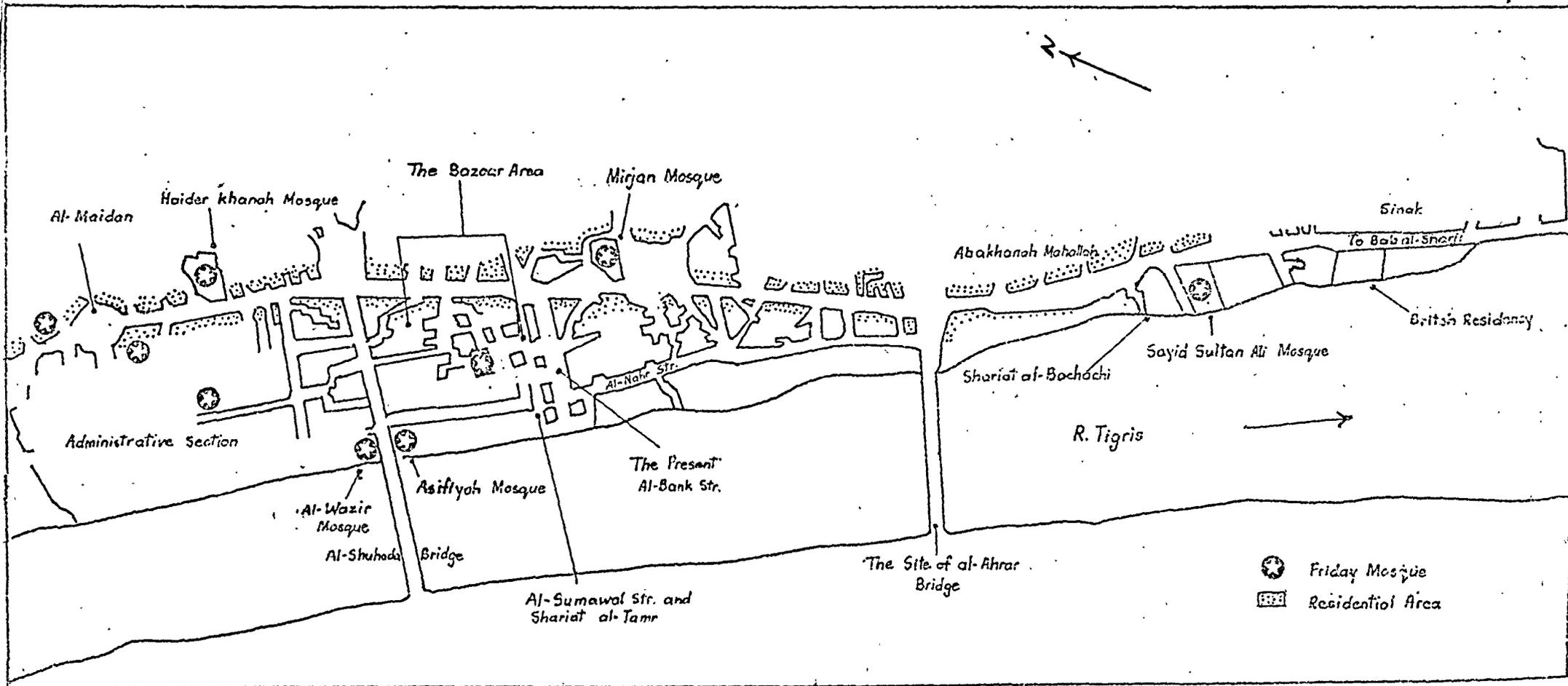
Kadhimiya (Fig. 6.6) attracted many institutions, such as khans, manzils (cheap hotels) and coffee houses. The monumental Bazaar of al-Istirbaḍi emerged at this point running to the west gate of the shrine of al-Kadhim. The tram system was the first modern transport development which came in as a sudden innovation influencing the whole physiognomy of the town. Although Baghdad has no streets on its East Side (al-Rusafah), in the modern sense, one can still identify a main axis to the town. This was not deliberately planned as it spontaneously evolved, following the main lines of the bazaars near the bridge head. The first motor-vehicle appeared in Mesopotamia in 1908 from Aleppo. By 1914 less than a dozen were in use, they included a motor bus service on the Baghdad-Bagubah road, and the private cars of a few notables.¹⁹ Consequently, the necessity of building modern roads and improving the old ones was felt necessary by the government.

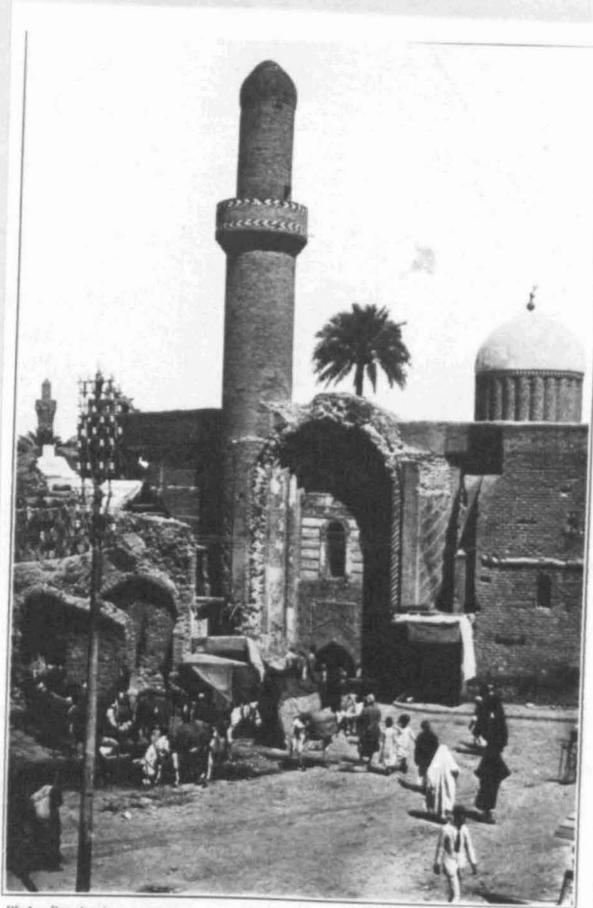
In 1902, a new pontoon bridge replaced the old one. It was wide enough for vehicle traffic²⁰ (Fig. 6.7). In 1910 al-Nahr thoroughfare was widened, and this soon became the main business street attracting local and foreign commercial firms: Several metropolitan khans had developed on this street some of which still function (Figs. 6.7b, 6.8^{a, b}).

Al-Khaffafin Bazaar, where al-Nahr Street ends, al-Sarrajin Bazaar and al-Sarai Bazaar, can be considered as the continuation of al-Nahr Street. This commercial axis lead to al-Sarai and the Ottoman Qishlah (Administrative premises) through the heart of the city. It was the chief artery of al-Rusafah before the World War I.

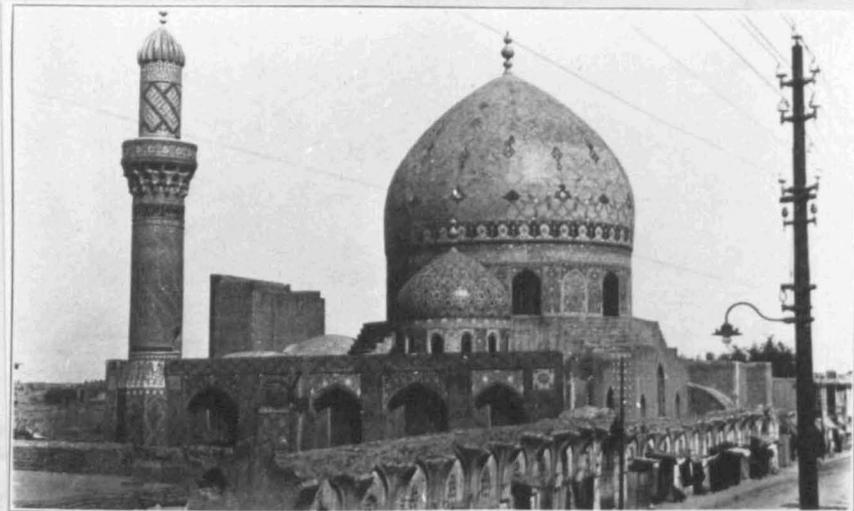
Apart from this internal axis, the city had no complete direct line connecting the north gate with the south gate. The first world war was the main reason behind one of the most dramatic plans. A

Fig. 6.10. Al-Rashid Street (1869-1920)





a. Mirjan Mosque after its truncation by al-Rashid street in 1917



b. Al-Haider Khanah Mosque and its bazaar destroyed by al-Rashid street in 1917

new break-through street, the present al-Rashid Street, running from the north gate to the south gate, was carved through the compact old city. The Ottoman regime wanted to facilitate the inter-communication between their important military offices and depots, rather than to modernize the city itself. The street was cut through the most beautiful mahallahs, ruined certain fine houses, and chopped off half of the noble mosque of Mirjan in order to preserve the accuracy of its straight line (Figs. 6.9a, 6.10). This street, which is now undergoing an essential physical redevelopment, is the chief business street in Baghdad. From Bab al-Mudham at the north end of the town to al-Maidan, the largest public square in the city at the time, there was a fairly wide roadway already in existence. A large block of private houses separated this from the Haider Khanah Bazaar adjoining the great mosque of the same name (Figs. 6.9b, ^{6.10} 6.11). At this point there was a direct connection, by means of lanes and another bazaar, to the Mirjan mosque, in the centre of the city. (Although Baghdad is now very much bigger, the Mirjan Mosque is still the centre of the city). Here a short open road, north of al-Bank Street, led to the river at Shariat al-Tamr (date landing or quay). Southwards a solid mass of khans and courtyard houses form a mahallah of about a mile to another short street leading to a quay known as Shariat al-Bachachi. From this shariah an open road existed past the Said Sultan Ali Mosque to the new British Residency, thus reaching Bab al-Sharji by cutting through its gardens.

The religious authorities objected to this scheme of carving out a street, as it would destroy al-Awqaf property such as al-Haiderkhanah bazaar.²¹ Nevertheless the street was cut without compensation (Fig. 6.9b). The new war circumstances were taken as an opportunity not to

compensate affected inhabitants thus breaking Islamic Law. The new street, (al-Rashid Street) successfully began to compete with al-Nahr Street and gradually attracted the main business firms and agencies which began to move there. After the opening of the new street, the north and south gates of Baghdad's wall developed similar functions to those found in the open spaces (sahahs) of the mosques, where these gateways were easily accessible. The creation of al-Rashid Street together with the widening of a few other crossroads raised the value of individual plots, promptly inducing modern developments, as a new spatial arrangement of land use had been initiated in the city. A three-storey buildings began to develop along this street breaking the monotony of the traditional townscape of Baghdad.

To connect this new street with al-Nahr Street and with the Tigris, some crossroads were cut through the compact mahahallahs; the main one was al-Sumawal Street, starting from Khan Mirjan and heading towards the Tigris. (It was known as al-Polanchiyah Street)²² Originally it was an alley in the bazaar area. It is now a part of the financial section of the commercial centre of Baghdad connecting al-Shurjah, the traditional commercial hub of the city with al-Nahr Street, flanked by fine khans and modern semi-skyscrapers deforming the historic scene of this central area (Figs. 6.8a, 6.10). Then, as now, old Baghdad did not develop a single river street, as houses are built touching the river edge.

Land Use:

As at present, the most important land uses were residential, religious, commercial and governmental, but then as now, these four types were not clearly distinguishable as they are in western towns. In fact functional admixture is a typical feature of the Arab town and is widely exemplified by the development of small shops on the alley level of the

houses, mosques and khans. Careful examination of the city in this period shows that Baghdad's commercial centre contained the bazaar network with their annexed institutions, the residential mahallahs including the jamis (Friday mosques), ^amsjids (chapels), hammams and coffee houses. Finally the city had its fringe belts dominated by orchards, cropped area, graveyards, kiln works, railway stations, police stations, hospitals, khans and certain types of dwelling houses.

Residential Structure (Fig. 6.1)

No reliable figures can be found relating to population, housing, the area of the city and other aspects of life in Baghdad and Mesopotamia during this period. Instead one finds ^ggreat discrepancy in the available information. For the first time in its history Baghdad had a Registration Office,²³ which carried out in 1869 the first official census for men. Women are excluded for traditional social reasons. According to this census Baghdad had 65,683 males including foreigners, mainly Persians.²⁴ The number of houses was 18,407, but according to al-Duri there were 16,303 in 1882,²⁵ while in 1884 the figure given was 16,426. Harris put the population of the city in 1900 at 100,000.²⁶ In the same year the population of Baghdad Province which corresponds almost to modern Iraq, was estimated at 2,250,000.²⁷ By 1904 the population of Baghdad was put at 140,000. In the second decade of the 20th century Coke put it at 180,000 of whom 45,000 were Jews.²⁸

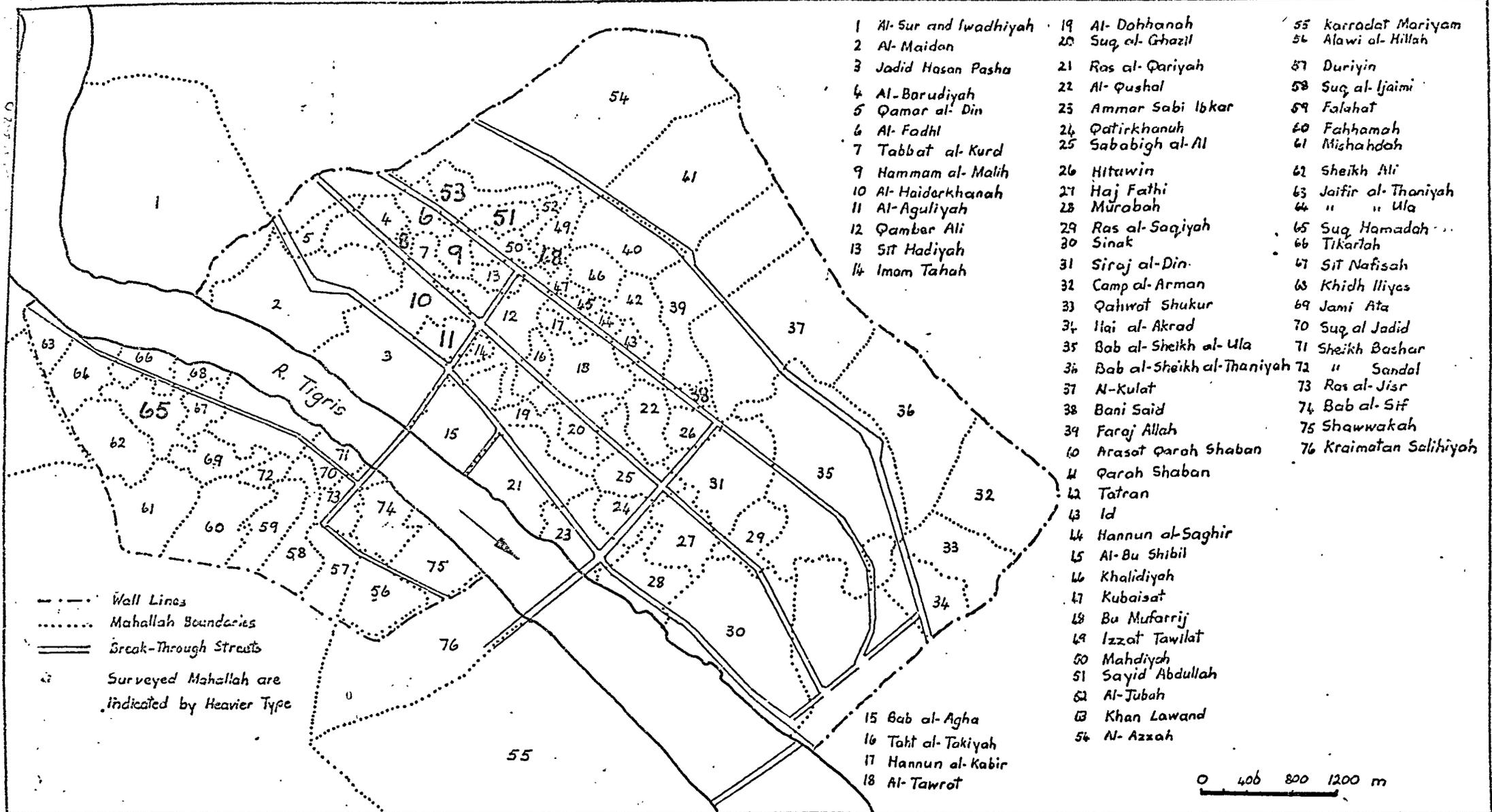
The bread ticket system incidentally, enabled the British authorities to make a fairly close estimate of the city's inhabitants, which was put at about 185,000 of which 129,800 were Moslems, 35,255

Jews and 15,000 Christians.²⁹ The density of the population varied from one mahallah to another. In some cases it was found that fifty people were living in one house of nine rooms, and 25 in a house of five.³⁰ This is not very different from the case in certain mahallahs of present-day Baghdad.

The area of Baghdad was 4 sq. kms. The city was a very compact settlement, 400-600 dwellings per hectare. Generally, the average household size is smaller in the southern parts of the city where some new houses were built to accommodate wealthy families. Polygamy was a common practice but later declined for economic reasons. Even so, the average number of persons in a single family is still larger than in many other countries. The family number varies from 6 - 12 or even more, depending on the economic background. At this period Baghdad was made up virtually, of several independent socio-geographical parts - Karkh for example was too far for those who reside in al-Fadhil or Bani Said in Rusafah.

Al-Karkh was ^Cexclusively populated by Arabs. Al-Rusafah on the other hand was inhabited by Arabs, Persians, Kurds, Indians and Europeans. Remnants of Mongols are to be found here where they are perhaps integrated with al-Fuwailiyah (Persian Kurds). Inhabitants of every ^ecreed or race congregated in particular mahallahs. The Turks and some well-to-do families, generally occupied the northern mahallahs of the city.³¹ For the most part aristocratic Arab families apparently lived in mahallahs stretched between al-Sarai and the grand mosque of Mirjan. Almost every mahallah had its own leader. In certain times of ^{stress} mahallahs employed their own nocturnal vigilantes. Some of the zuqaqs in certain mahallahs had their own gates which used to be closed by great doors at night.

Fig.6.11 Traditional Mahallahs of the Old Town



Even now it can be safely stated that the mahallah sub-zuqaqs, or private zuqaqs are exclusively used by the mahallah inhabitants. A stranger can not walk through such zuqaqs, if he was unknown to the inhabitants. At the close of this phase, Coke put the number of mahallahs in al-Rusafah and al-Karkh at 57 and 22 respectively.³² This was eleven mahallahs less than what was given by F. Jones seventy years before (Fig. 6.11). They vary in area between 4 donums (10,000 sq. m) such as al-Bu-Mfarrig mahallah to 145 donums (36,2500 sq. m) such as al-Kulat Mahallah.

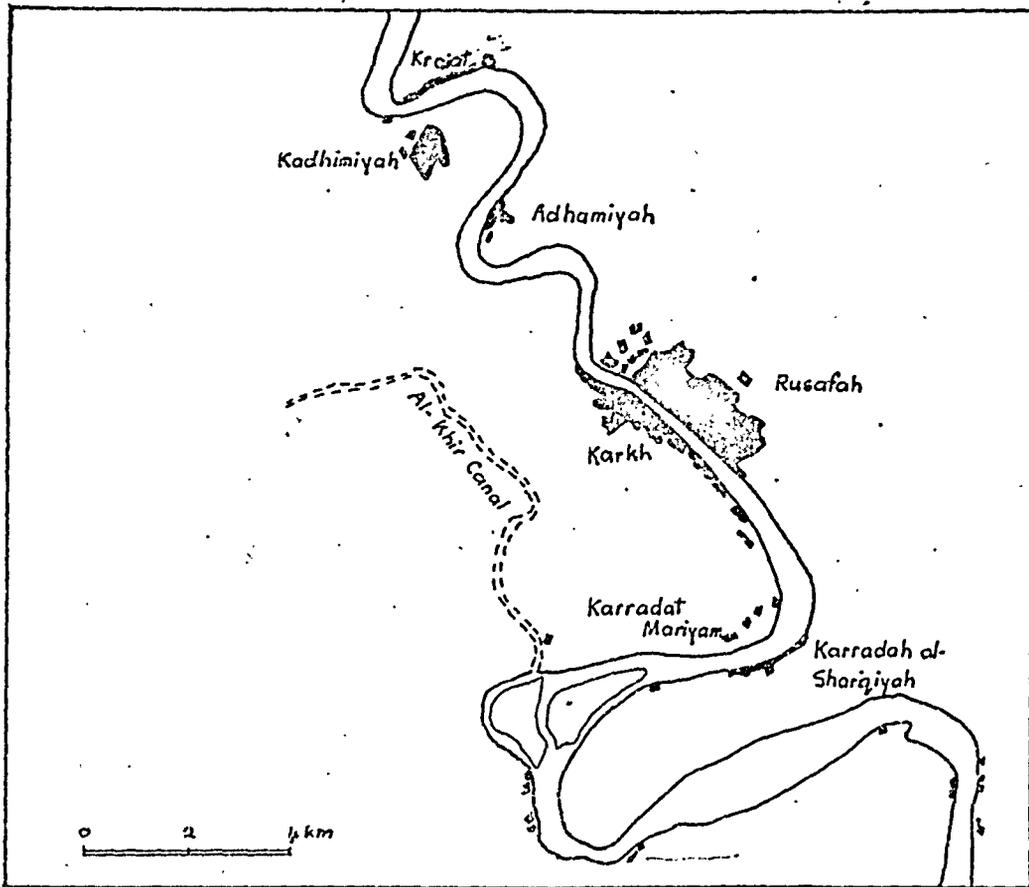
Apart from the mahallahs which were inhabited by Ottoman officers and officials, almost all the others had grown influenced by tribal considerations. Each mahallah was occupied by a certain tribe and it was not uncommon that occasionally fighting took place between mahallahs. This continued spasmodically until the end of the 1940's in certain mahallahs of the city.

The names of many mahallahs suggest that they are identified by kinship, religion or regional place of residence. Even now many mahallahs of the city bear various names originating from the names of tribes or clans.* The Jewish and Christian minorities were living in their ancient mahallahs north and west of Jami al-Khulafa respectively. Jews had enjoyed the advantage of their central mahallahs close to the main bazaar network and at the same time not far from al-Sarai, thus maintaining maximum security.

The oldest Christian community occupied al-Maidan mahallah, as the ancient Armenian church, recently rebuilt in quite modern style, suggests. They shifted during the period 1917-1936, firstly to Agd al-Nassara, the Christian mahallah, then to al-Sinak Mahallah. The latter movement was made primarily by the wealthy Christians, who again moved to al-Battawin to the south of Bab al-Sharji.

* This will be seen in studying the present mahallahs of the city on the basis of the fieldwork.

Fig. 6.12 The Built-up Area of Baghdad and Environs in 1920



Europeans, on the other hand, had developed decent houses to the south of the built-up area, primarily around the British Residency which was the centre of the local European community.

There was no reliable system of zuqaq identification or house numbering. During the British occupation, however, a modern system of numbering the city by mahallahs was introduced, thus giving the householder for the first time an exact and unmistakeable address.

Many mahallahs were lacking health services and play grounds. The compact type of settlement does not allow sufficient open spaces, gardens and recreational facilities.

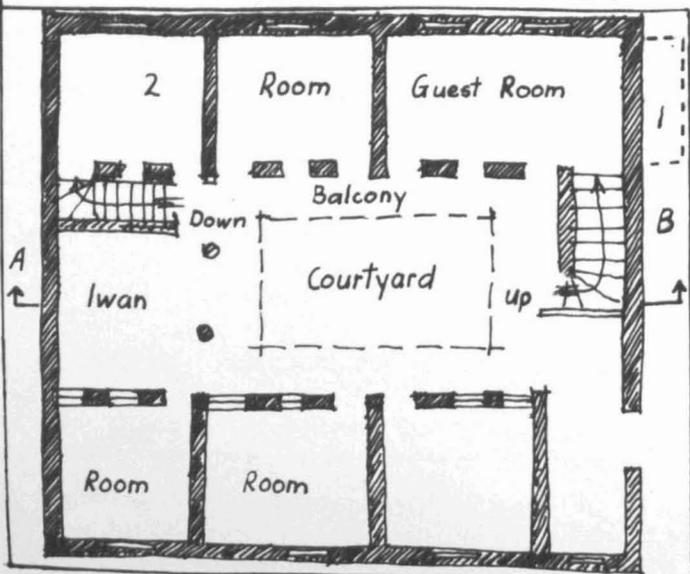
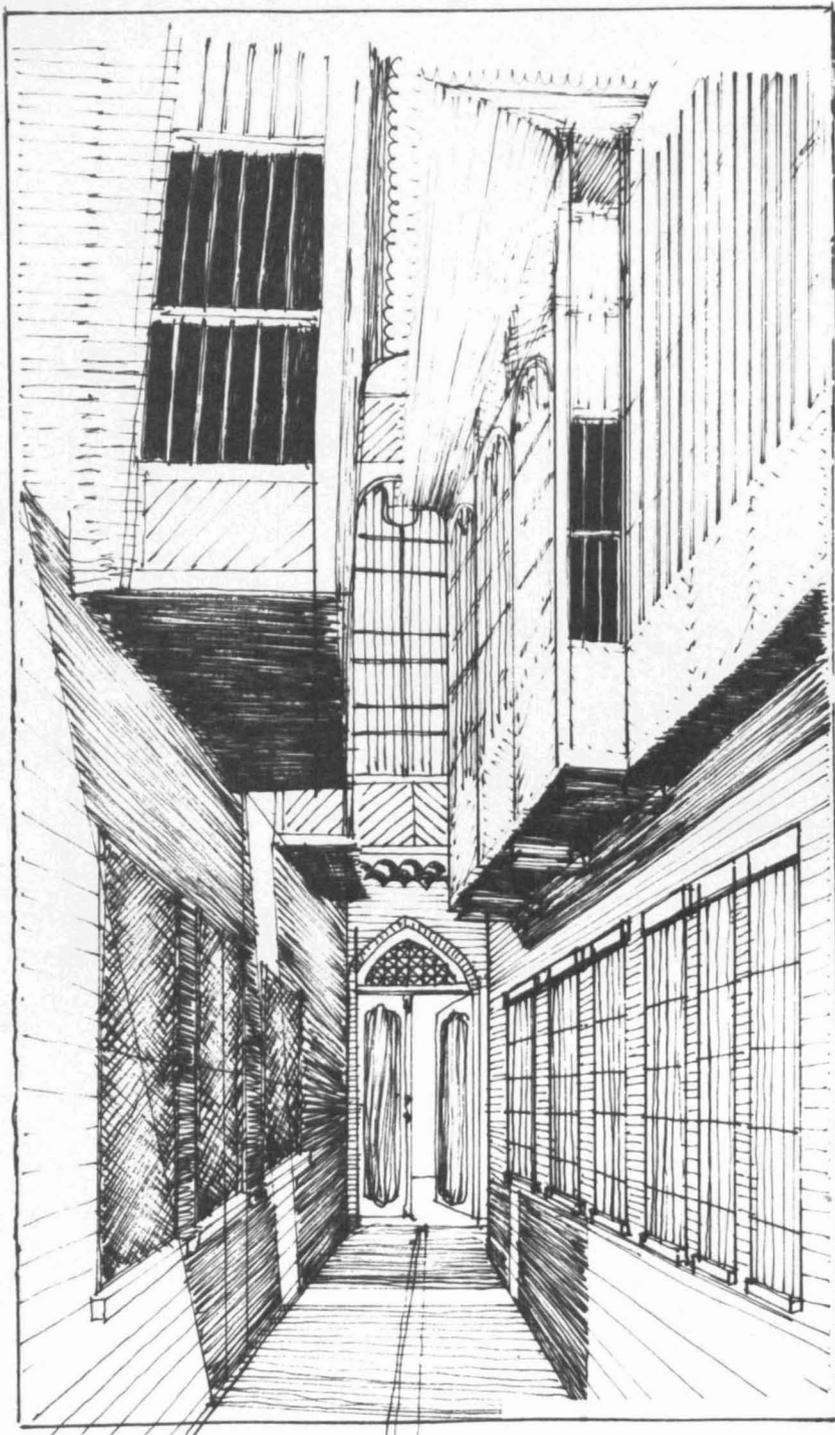
The opening of the new British Residency in 1905 at al-Rusafah on the Tigris led to a considerable development of the city southwards from Sayid Sultan Ali mosque to Bab al-Sharji. This development had been accelerated by the new pontoon bridge in 1918, which was constructed almost at the margin of the built-up area in al-Rusafah.* It was replaced in 1939 - 41 by the permanent bridge of al-Ahrar.

In this period, however, some wealthy people began to move to the periphery of the town, along the Tigris, heading mainly towards Bab al-Sharji. The wealth of Arab Moslem people was based on land ownership whereas that of Jews and Christians arose from commerce and other businesses.

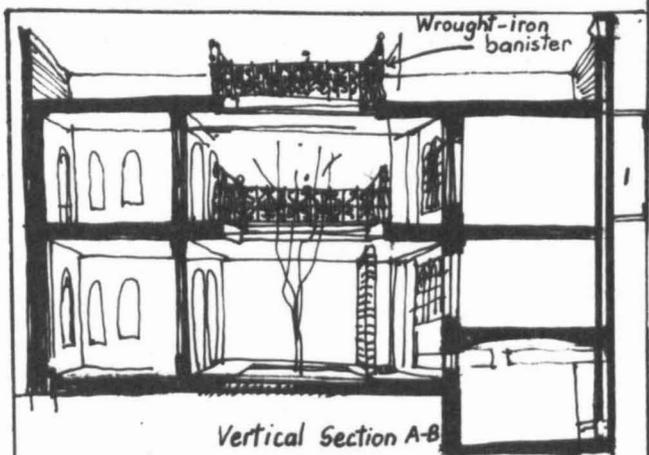
The intimate relationship between the river and city growth can be seen in the continual fringe of handsome buildings put up on both banks of the Tigris, connecting Baghdad with Karradah al-Sharqiyah (Fig. 6.12). The southward growth of the city can be attributed to the development of the water supply, the establishment of a police station at al-Battawin, and to the introduction of arabanah (horse drawn carriages) the new means of transport. Many of the river houses have their own

* A full interesting description of this bridge appears in Halls' work.³³

Fig. 6 13F Traditional Courtyard House



Ground Plan



Vertical Section A-B

1. Shanashil 2 Bathroom and Kitchen

Fig. 6.13E

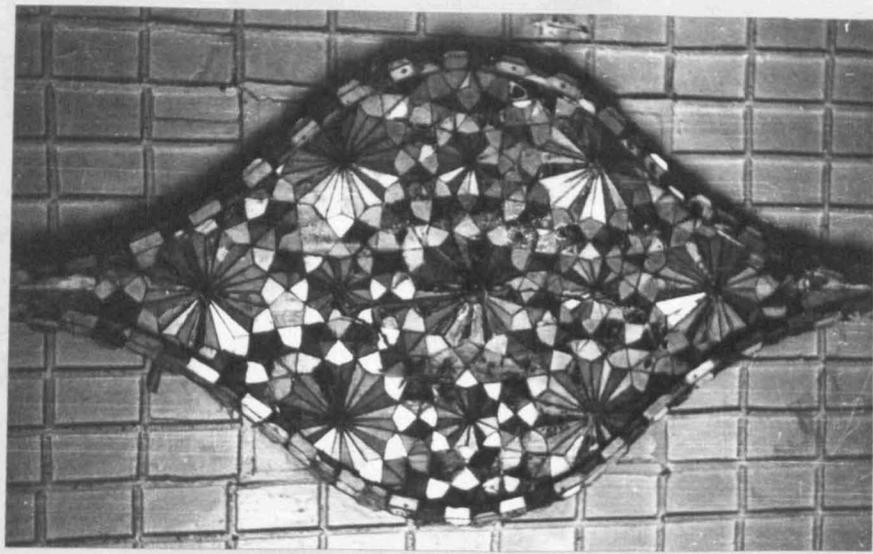


a. A typical badgir (air scoop)

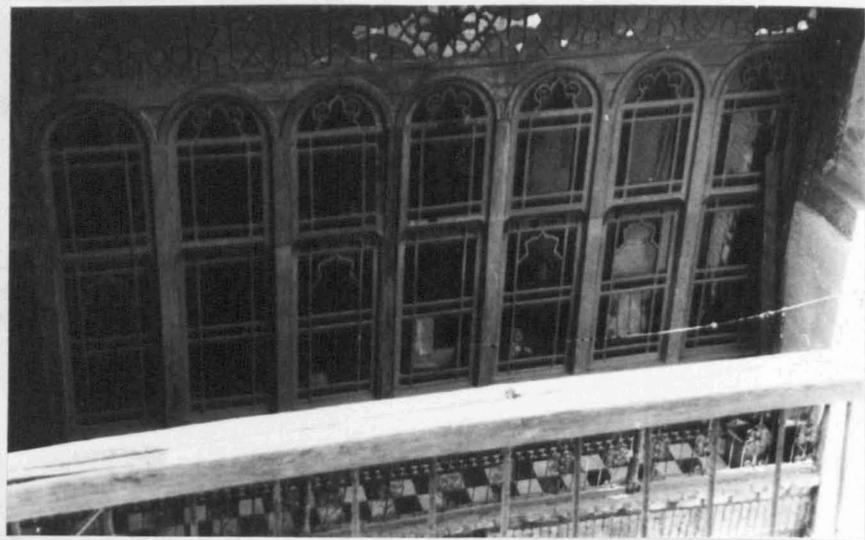


b. A wooden pillar and its capital

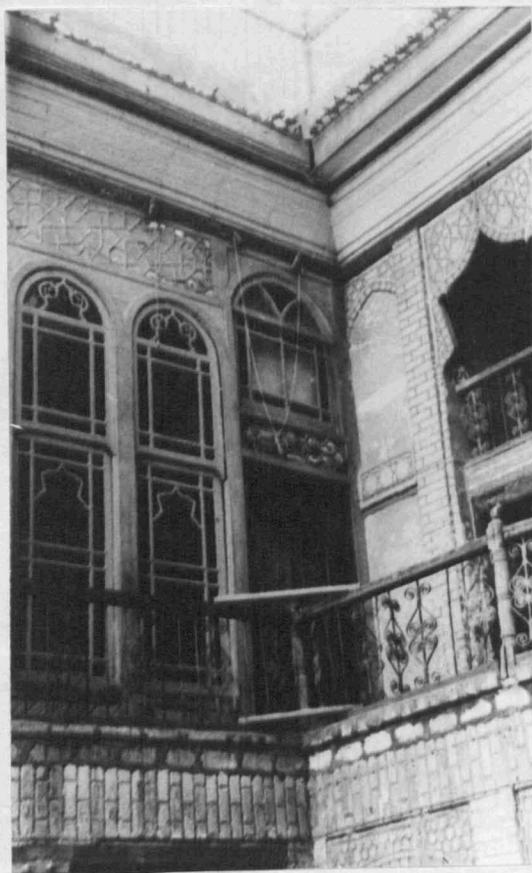
Fig. 6.13D Courtyard house details



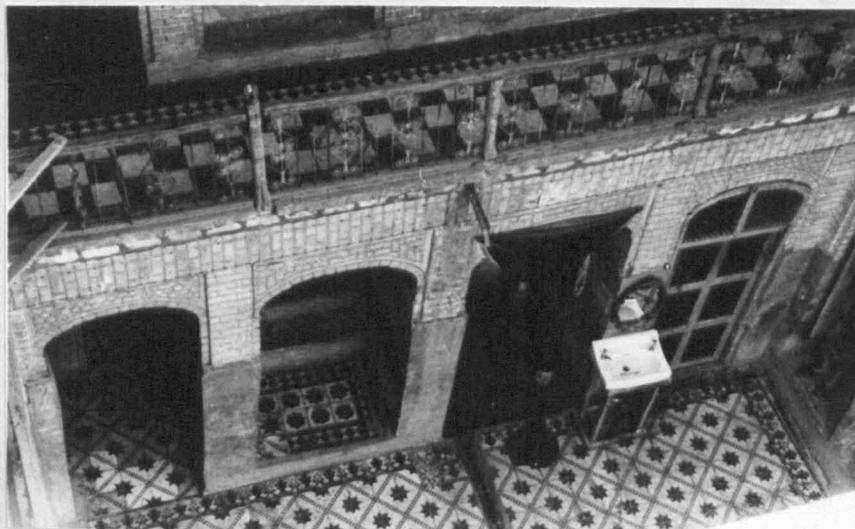
a. Ceiling ornamentation of a room on the first floor



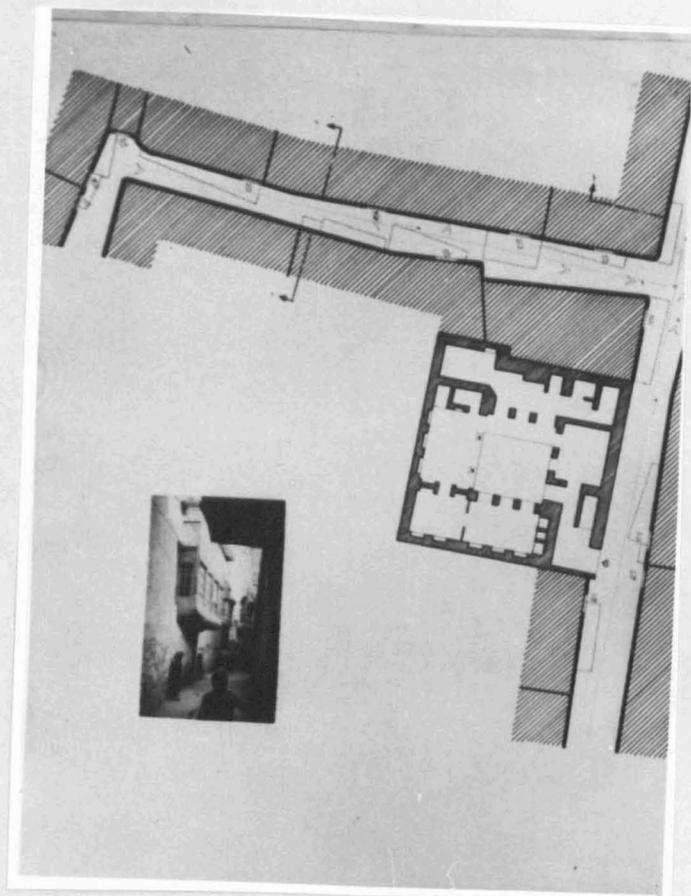
b. A bedroom on the first floor across the courtyard



a. Windows of first floor rooms facing the courtyard



b. The gallery above the courtyard

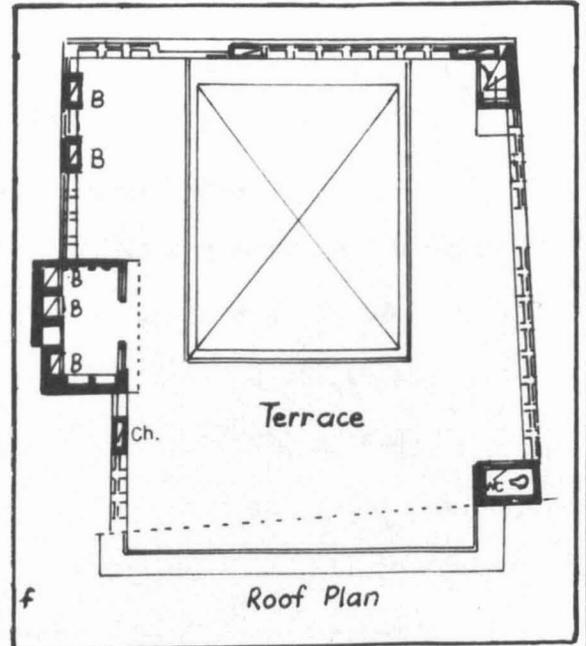
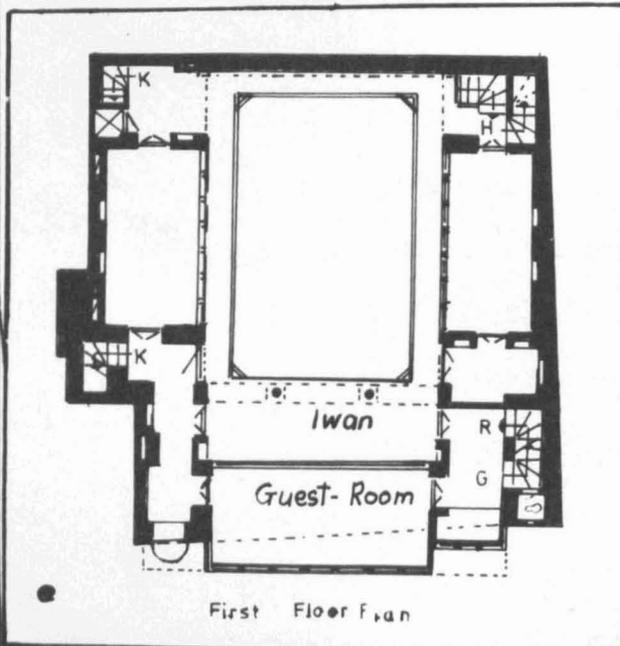
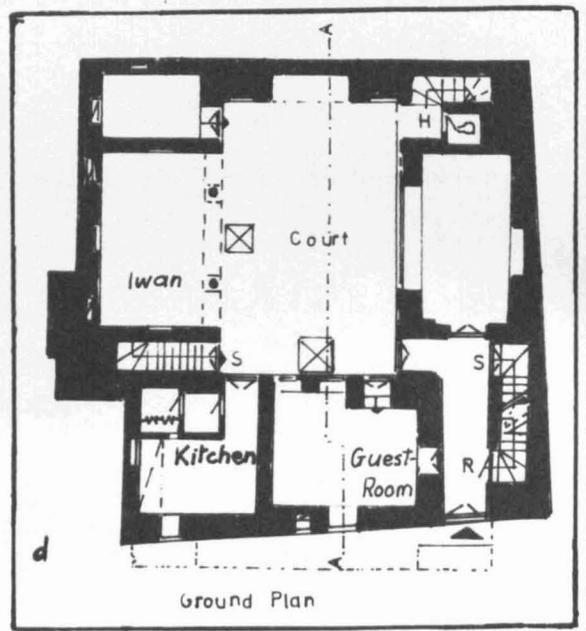
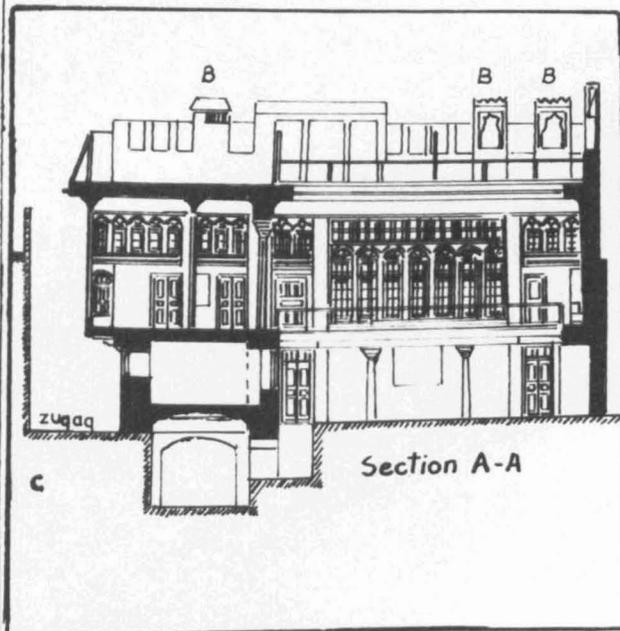
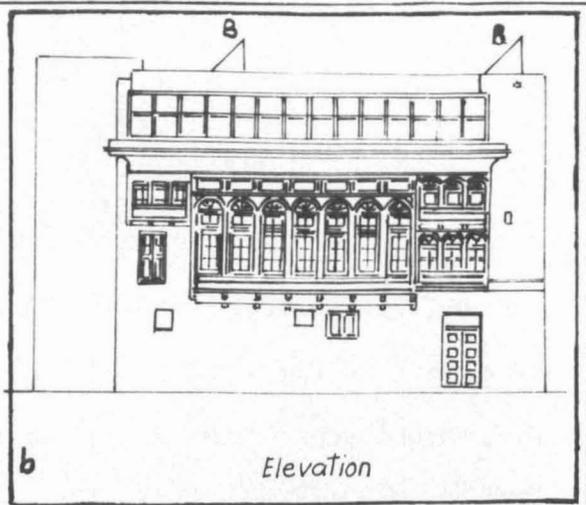
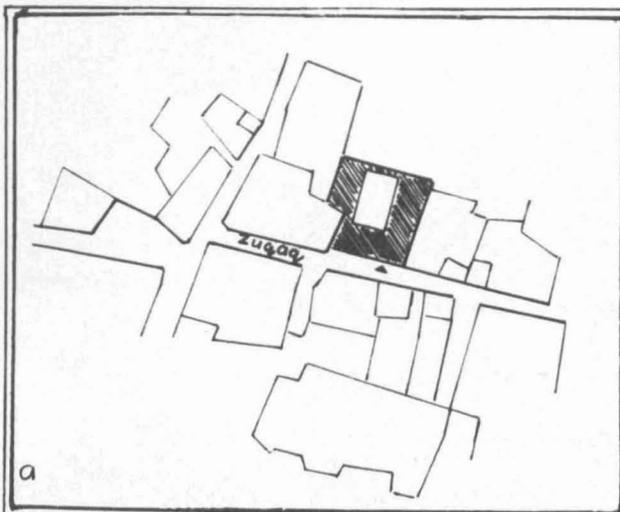


- a. A traditional Baghdadi zuqaq with the plan of one of its traditional courtyard houses - the zuqaq elevation of the latter being shown in the photograph.



- b. A traditional courtyard house now converted into a school.

Fig. 6.13A The Traditional Courtyard House



0 2 4 5 m

- H. Staircase leading to a family room and the terrace.
- S. Pair of staircases leading to separate sirdabs, one for the family and one for the guests.
- R. Staircase leading to the guest (reception) room.
- K. Two further staircases leading to the Kebiskhan.
- B. Badgirs catching prevailing N.W. wind.
- Ch. Chimney

stairs leading to the Tigris, in which quffahs continued as the popular means of river transport. A complete review of Baghdad at this period can not be achieved without analysing the form, structure, and evolution of the traditional Baghdadi or Arab courtyard house, the only house type known in Baghdad before 1920.

The traditional Arab Courtyard House: (Fig. 6.13A, B, C, D, E).^F

Study of the structure of the remains of traditional Baghdad in al-Rusafah, Karkh, Adhamiyah and Kadhimiyah, their zuqaq system and how their houses have been conceived and arranged furnishes a picture of Baghdad in its second and third morphological phases. The analysis of the traditional Baghdadi (Arab) house, within its Baghdadi context will help considerably in elucidating how Baghdad evolved before 1936 and how the experience and needs of many generations were expressed in this plan, influencing the whole complexity of the city. Houses are not mere physical shelters housing their inhabitants. In his house man has developed many ideas, hopes and dreams beyond the satisfaction of simple protective needs.³⁴ As yet there has been no geographical study of the Arab house in Mesopotamia, which could yield many hitherto unsuspected discoveries. In its long history the courtyard house has proved to be very flexible since its simple form is adaptable to a variety of uses. Therefore its basic form originated independently in regions of different cultures. In Mesopotamia it is to be found as far back as 2,000 B.C. at Ur, Nineveh and Babylon. The original inhabitants adopted the courtyard as the "key element" of their houses.³⁵ * From that date until 1936, the courtyard dominated

* The courtyard house was also developed in the Roman-Hellenistic-Byzantine areas, before the Islamic era.

all the building development of Baghdad. Thus, its influence is recognizable in constructions such as khans, governmental buildings, schools and always. / The courtyard plan gave such buildings good protection against the marauding bedouins. The basic needs of Arab culture and traditions has indeed been translated into this physical form.

Traditionally Arabs avoid partitions because they do not like to be alone. The form of the house is such as to hold the family together inside a single shell. This is because Arabs are deeply involved with each other. [Their personalities are intermingled and take nourishment from each other like the roots and soil. If one is not with people and actively involved in some way one is deprived of life.* Three types of courtyard houses are in use in Iraq; the upland, the central and the southern marsh type.

All the houses built in Baghdad before 1920, are of the second type. These are the outcome of prevailing historical, socio-economic and climatic conditions and satisfy the Arabs, as they have maintained plenty of unobstructed space in which to move around, at the same time giving complete privacy.

This physical form was so successful and so common that almost all the private and monumental buildings before 1936 adopted it. It met the basic requirements of the everyday life of the inhabitants of both city and village in Mesopotamia.

It is interesting to note that materials and methods of construction of rural houses in the Baghdad region as a general rule differ very little from those traditionally used in the city. Until now, modern building methods have been little known with the exception of buildings associated with wealthy inhabitants and govern-

* An old Arab saying reflects this rule: "Paradis^e without people should not be entered because it is hell"36

mental activity. However, with the recent development of communication between Baghdad and other urban centres of the region, technological progress has entered Baghdad's rural areas to a limited extent.

The principal materials are sun-dried bricks, reeds, other aquatic plants and bricks. [The principal method of constructing mud walls is to use the materials without any framework. Roofing is carried out by means of wooden beams or tree-trunks, on which mats or branches are laid, the latter supporting the insulating layer of mud which forms the terrace. Doors and windows are not usually fitted. The apertures for doors and windows are left free although in houses of families with higher income rudimentary doors and windows of wood or other easily available material may be provided. From the courtyard the light is reflected into the rooms through the entrance doors and is the place where guests are entertained. It is also the area where the family congregates, the children play in privacy, and where the family sleeps during the nights, in the hot summer. Animals sometimes sleep in the courtyard too. The main characteristic features of the rural courtyard in the Baghdad district are palm trees, wells and tamur, a distinctive conical shaped mud oven used for baking the traditional circular type of bread.

Unfortunately, almost none of the engineers and architects trained in the west, make any distinction between "westernization" and "modernization", and the traditional courtyard house, so appropriate to its Arab context, began to be ignored from the 1930's on. Architects and engineers have yet failed to adopt their acquired expertise to Arab social and economic needs. The prevalence of the Baghdadi house was the outcome of several effective factors, such as Islamic philosophy and tradition, available building materials, family social life and climate.

The sky for Arabs is a kindly aspect of nature. It is for an Arab, pure and clean, promising coolness and life, and giving water in white clouds. The sky for him is the home of God and was regarded as a dome supported by four columns.

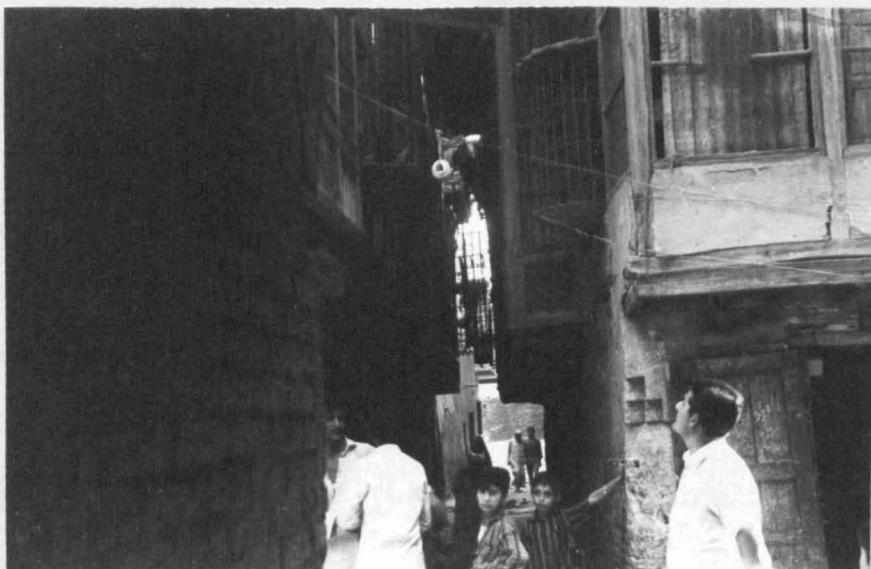
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Hence, when the Arab embarked upon a settled life he brought the holiness of the sky into his house and, at the same time, shut out the desert with its blinding, suffocating sand and inhospitable demons. The courtyard now became an inevitable development. The house, therefore, is a hollow, rectangle turning its blind, windowless walls to the outside. All its rooms look inward to al-Hosh (courtyard) from which only the sky can be seen. This courtyard became the owner's private piece of "sky". The courtyardhouse achieved a full serenity, which is not imaginary. It is a fact to be experienced by anyone who enters into any of the thousands of Arab houses in Baghdad or into the cloisters of a traditional school or a khan.* When they adopted the courtyard plan concern of grandeur and monumentality was of secondary importance. It is a priceless religious representation.³⁷

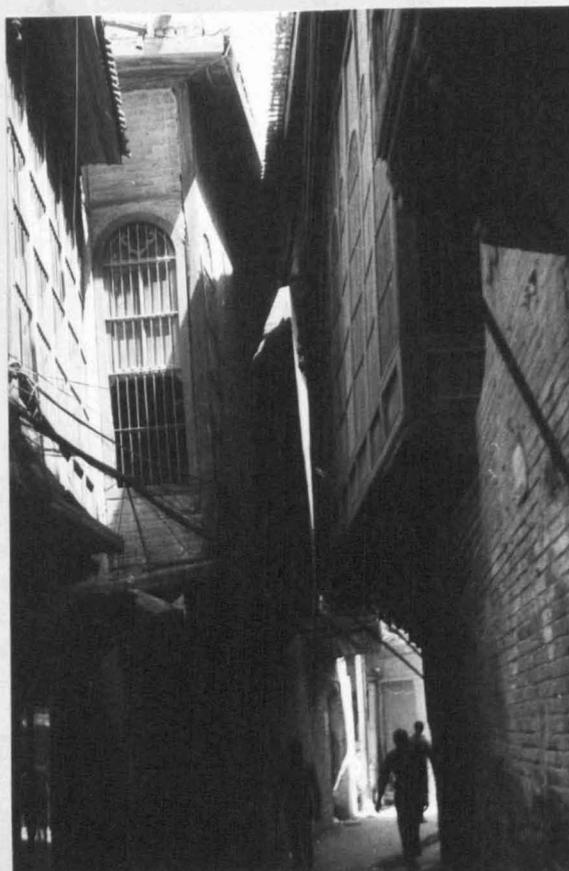
The organization of the Arab family required that the house should provide maximum privacy and protect its dweller from the eyes of the outsider. These requirements led to the development of a 'double

* Here it is to be remembered that the wholesale adoption, by the Arabs, of the courtyard plan does not reject (refute) its previous existence in several other regions. For example the ideal house of the first century A.D. in the Roman countries was the courtyard-planned dwelling of Mediterranean origin. The courtyard plan was very common throughout classical domestic architecture from very early times. The courtyard here was not the invention of the Romans, though they introduced it wherever they went. Courtyard planned dwelling was inherited by the Romans to a very large extent. Smaller houses in Crete for example were of courtyard house-planned and dating as far back as 2,000 B.C.

Fig. 6.14



a. A zuqaq with its typical blind walls on the ground and first floor shanashil (Bani Said Mahallah)



b. Almost all the traditional zuqaqs are crooked with maximum shade provided by their shanashil. (Agd al-Nassara Mahallah)

circulation' system, of the division of the house into salamlik "guest quarter" and harimlik* "women or family quarter". This continued to dominate the plan of houses represented in the next morphological phases. Generally speaking, women are still segregated from menfolk, unless they have blood relation necessitating such contact.

عزيم
The tight structure of old Baghdad is chiefly owing to the climate. Houses are huddled not because the population tends to grow but because protection must be provided against the heat, and in turn gave Baghdad its compact pattern. The need for a barrier against heat meant a logical development of thick massive walls, built with either sun-baked yellow bricks set in mortar or kiln bricks. Baghdad developed its packed houses, and the zuqaqs gradually narrowed to be almost covered in (Fig. 6.14a,b). Different cultures have different principles for the arrangement of their buildings.

Detailed examination of selected representative zones of Baghdad, in particular, and the whole city in general revealed that virtually all residential buildings fall into four main architectural categories.

*البيوت التقليدية
1920-1936
1936-1945
1945-1950
1950-1957*
The first is the traditional Arab courtyard house built before 1920, the second is the modified traditional Arab house adopted in the third morphological phase 1920 - 1936, the third category is the eastern house with covered courtyard and developed in Baghdad during the period 1936 - 1945, and the fourth is the western house introduced into Baghdad and other Mesopotamian towns after 1945.

The first type, which on average occupies 100 sq. m, 80 - 90 per cent, of the plot or land parcel, is built-up. The built-up percentage

* The word "harim" (women) is related to "haram" sacred, unviolable which also denoted the family living quarter in the traditional Arab house.

Fig. 6.16



a. Gateways of traditional courtyard houses never face one another across the zuqaq



b. Shanashil dominate the Baghdadi "zuqaqscape"



Fig. 6.15 A section of traditional Baghdad with its 'caked' morphology

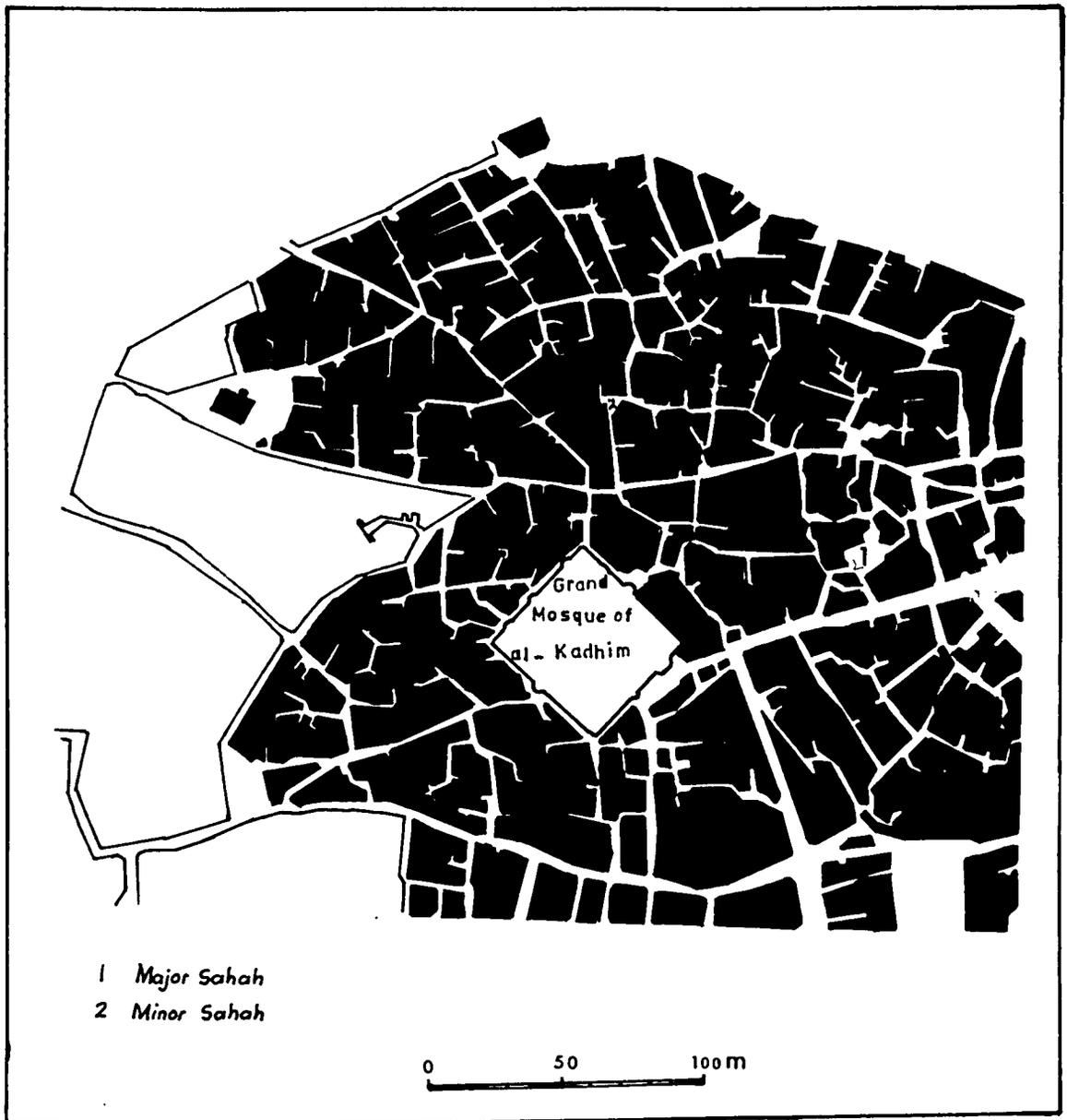
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of the second type, which is usually between 100 - 200 sq. m. is 60 - 80 per cent. In cases where the area of this house type is between 200 - 300 sq. m., the building coverage will be reduced to 50 - 70 per cent. The houses built after 1936, are varying in size, being 300 - 600, 600 - 800, and 800 - 1200 sq. m. The building coverage for them respectively are 35 - 50 per cent, 30 - 40 per cent and 25 - 30 per cent. The average cost of construction per sq. m. varies from 10 to 30 I.D. depending on the quality of the construction materials and some other factors. It is interesting to note that the traditional Arab courtyard houses built before 1920, terraced (modified) Arab court-yard houses before 1936, and the villa type houses after 1936, each of which multiplied over tracts of the townscape, from the city core outwards in all directions, produce a distinct texture in the physiognomy which may be described as completely caked area only cut by zuqaqs (Fig.6.15)

Bricks with wood, bricks with lime and iron, bricks with concrete are the main building materials used in these forms of houses respectively.

Only after 1936, traditional Arab houses gave way to detached and semi detached houses, which developed outside the traditional cores of the city. Consequently, the old residential parts of the city became increasingly occupied by commercial premises. The traditional house developed around the courtyard according to the physical condition of the plot while at the same time allowing the individual complete freedom in the internal planning of the house. Its exterior provides a protective shell. Apart from the gateway doors, zuqaqs show very simple facades and have walls with a minimum of decoration. Gateway doors, for social reasons, are not facing one another (Fig. 6.16a): Traditional houses have jettied wooden upper floor sliding windows (Shanashil). Shanashil overshadow the meandering zuqaqs and maintain the maximum protection

FIG.6.17 THE OLD TOWN OF KADHIMIYAH WITH ITS TRADITIONAL
TISSUE-LIKE PATTERN

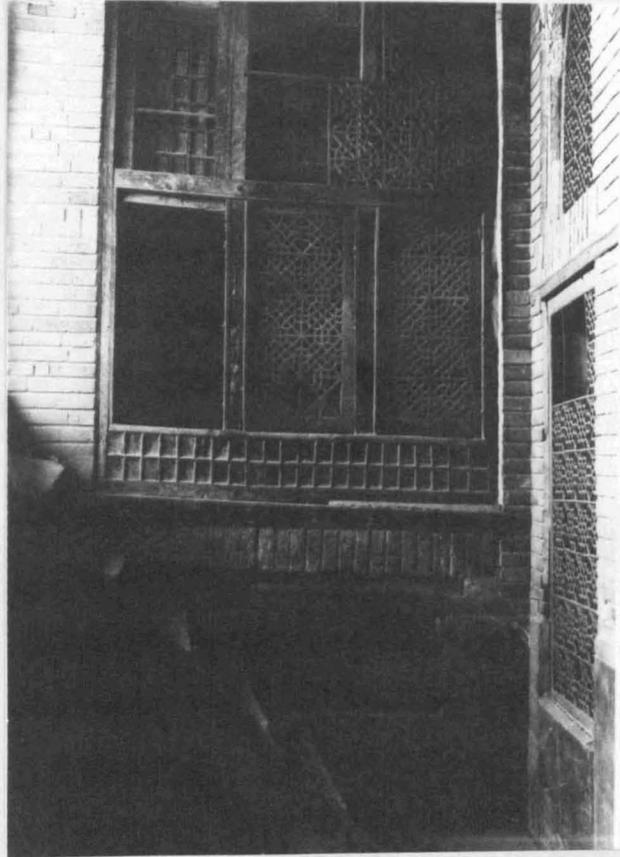


against the Baghdadi sun. In effect Baghdad had then a unified structure broken up only by courtyards and deprived of any visibly defined street-system. It was not unlike tissue and its only dominating features were the complex of mosques and khans (Fig. 6.15, 6.17). The absence of perceived planning, the irregular plots of lands, on which houses were constructed, (in many instances about 50 sq. m), together with the influence of tribal traditions, have produced the characteristic pattern of the zuqaq system and mahallah structure of old Baghdad.

The city grew up in such a manner that its houses were knit together into an irregular and complex network of alleys and agids (culs-de-sac) whose width was determined by climatic and defensive factors and by the mode of transport that was common before the first world war. Nevertheless a kind of hierarchical order in the zuqaq system can be examined. (Figs. 6.3, 6.17) Usually, main zuqaqs enclose large street blocks which in turn are divided into smaller sections by minor zuqaqs, finishing in a blind alleyway. Security is fully maintained by the latter, since they exclude nearly all strangers and by-passers.

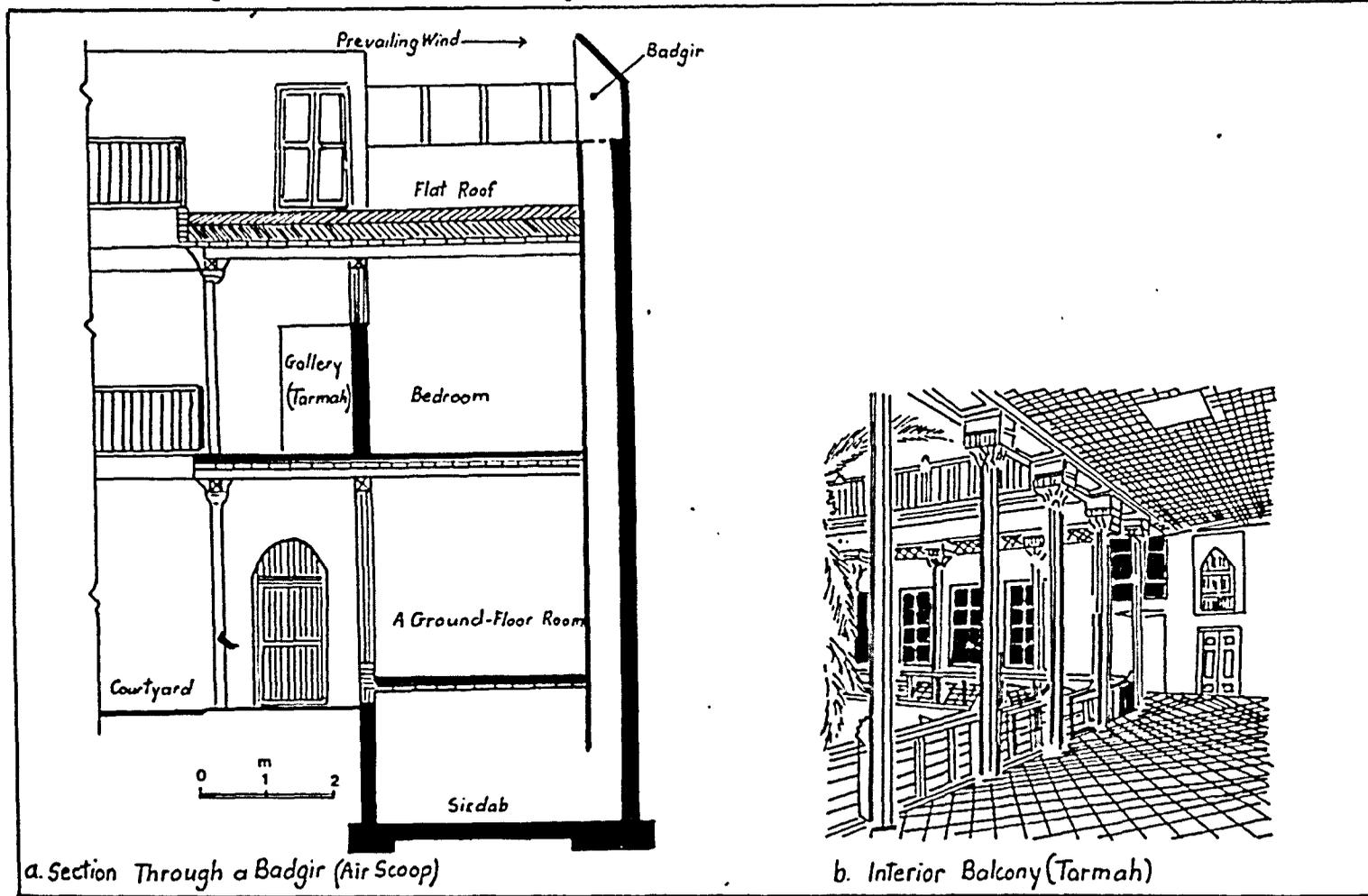
The characteristic upper-floor projections (shanashil, singular is shanshul) of courtyard houses with their varying sizes, and ornamentations, produce a juxta-position of masses and shadows. The roughly rhomboidal ground plan of many houses is ingeniously corrected at the upper floor level. This is achieved by setting the projections over the external wall, at an angle to the line of the facade, like the teeth of a saw. Thus it became possible to give the first-floor rooms a rectangular shape. Also the floor space is enlarged. These projections have windows, all of which are fitted with wooden screens, meant to ensure more privacy to the womenfolk inside. Shanashil form the dominant external feature of both the zuqaq and the Baghdadi houses (Figs. 6.14, 6.16),

Fig. 6.18B



Details of internal windows of traditional courtyard house

Fig. 6.18A Details of Traditional Courtyard House



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Possibly shanashil have been developed late during the Ottoman occupation. There is no reference to shanashil in the works of historians and travellers before the 19th century.³⁸ Mesopotamia is a country lacking in constructional timber. Presumably the Turkish occupiers introduced this innovation into the townscape of Baghdad. Turkey is a country with mountains rich with timber which were used considerably in the traditional Turkish houses.³⁹

5/1/20 The predominantly flat skyline of the town is broken by numerous colourful minarets, and lofty domes of shrines, jamis, masjids and hammams (Fig. 6.15). Moreover the harmony in the choice of colour, texture and materials such as timber, bricks, coloured tiles (kashi) glass and stucco provides another pleasant visual relief to the monotony of the town. The traditional Arab house has one or two stories with a total height of 4 - 8 m above the courtyard. The ground floor is mainly built with bricks, whilst the upper floor has timber as the main constructional material. Usually, the ground floor is used in summer, whilst the first floor is used in winter. Apart from the guest room, ground floor rooms usually have no windows, and are dependent on their doors for light from the courtyard.

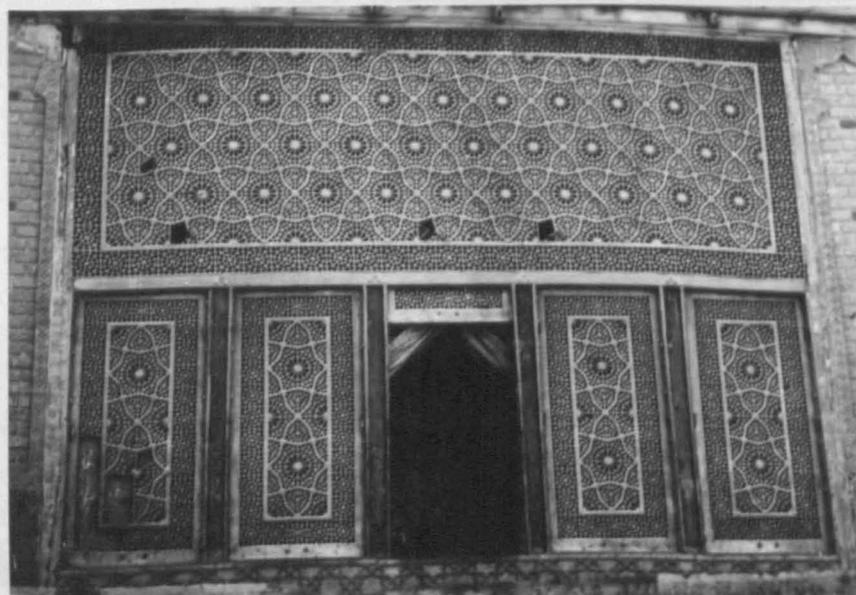
On the upper floor, also the rooms are inward looking towards the courtyard through the narrow gallery, surrounding it. The upper floor rooms, usually bedrooms, have a beautifully decorated wooden window facing the courtyard. Through these internal windows as well as the external ones, natural lighting and ventilation is achieved. The external window is not a single pane of glass but several small ones (Figs. 6.13c, 6.19Ab, 6.19B).

The entrance to the traditional house is always on ^acorner near one of the neighbouring houses. The courtyard is approached from the outside

Fig. 6.19



a. The door of a traditional courtyard house



b. Courtyard elevation of Kibishkan
(mezzanine room)

by a passage with one or two turnings to prevent any passer-by from getting a view. The broken 'dog-leg' shaped entrance ensures the privacy of the inhabitants and has an internal door which is kept open or covered by a curtain. Anybody passing by and looking through the door sees a blank wall opposite and not the courtyard and the people inside cannot see the outside and feel more secure. Usually doors are rich in decoration, with arabesques of religious inscriptions. All the doors are made of wood, with heavy iron knockers and handles. They are like entrances to a fortress, having two uprights, one of these acting as a pivot for the door (Fig. 6.19a). The door frame is generally surrounded by a decorated brick arch. The door concentrates the external aesthetic embellishment of the house, at the same time providing an easy indication of the status and wealth of the owner.

It is interesting to note a unique morphological feature that all over traditional Baghdadi zuqaqs one cannot find two doors facing each other. This expresses the power of social considerations on both the house patterns and the zuqaq-layout. Bricks are the main material of the walls, roof and entrance floor. In many houses the walls have niches and benches (razunahs) where it is possible to wait, to have short conversations, or to be used by hired guards especially during times of stress.

Entrances of the well-to-do families may have beautiful small domes and arches which enrich the ceiling and beautify the whole entrance. Passing through the entrance, one enters the courtyard where the formal and informal gatherings take place.

After the bustle of the street the quiet and ample space of the courtyard is very refreshing.

The courtyard is landscaped according to the owners' fancy and his wealth. In contrast to the low-income owner, who has a small unplanted courtyard, the wealthy owner has a large garden-type courtyard beautifully decorated. Tiles and bricks are used in decorative manner enhancing the walls of the court.

In case of larger residences there is sometimes a series of courtyards, one patio being endowed with a fountain, made up of coloured and patterned tiles and emerging into an other courtyard, which may again lead to a third one. Together they create a quiet cool luxurious interior and private environment.

In a domestic context a fountain is the symbol of a hot climate, corresponding to the fireplace of colder climates. Such fountains are significant focal points of traditional Arab houses. It is a useful monument since it does not only splash water in summer to cool the air, but also receives winter rain and can direct it by means of constructed channels to garden space beyond. In their architecture, Arabs had invented the early architectural bases of what is called "the environmental contrast". They tried to create a contrast between their desert homeland and the evergreen gardens and between the desert climate and the fountains of their courtyards.⁴⁰

The main characteristic of the courtyard of both the wealthy and ordinary owners is the palm tree or nabuk tree (Christ's thorn) which is surrounded by shrubs. The courtyard house has been criticised severely on ground of health and inconvenience during the winter season when the court is the only means of communication to other parts of the house.

The temperature contrasts between court and inner warmth are often extreme and when it rains, it is sometimes even necessary to use an umbrella to walk from one part of the house to another. Sheltered

passageways by means of colannades or interior room planning could easily look after such difficulties.

A guest-room, usually reserved for male guests, is one of the larger rooms of the ground floor and is generally facing the entrance. Normally it has a fireplace, which gives enough heat as well as to allow the preparation of hot coffee (Fig. 6.13A,F). It is 20 - 75 cm higher than the courtyard level, thereby small windows can be provided to the basement frequently found beneath it. The windows of the guest room, one or two, have timber shutters and set-in brick arches. To ensure a complete separation of this room from other quarters of the house, windows are always covered with permanently drawn curtains. Ornaments and antiques used to be displayed in the guest-room along the wall in the recesses (niches) provided which are small and above which runs a frieze in various styles. Portico (iwan) is a rectangular room, with one side fully open looking onto the courtyard, usually occupies a good position, and is surrounded by rooms. During summer days, it is used as a dining and tea room. It is another index to the wealth of the owner, and large houses may have two porticos, summer and winter ones. They are oriented according to the sun position in each season. Iwan is 20-30 cm higher than the courtyard level so that the occupants can enjoy over looking the courtyard.

Its other main function is to be used for the midday siesta and relaxing, so that it is paved with colourful tiles, the glazed face giving a cool and smooth surface.

Like the guest-room, the iwan has razunahs or niches of different designs and sizes equivalent to the cupboards of modern times. They are built in the surrounding three walls. In many instances their contents are hidden by small curtains of brocade and embroidery.

The ceiling has smooth and plain timber panels, whilst the ceiling of almost all the rooms of the ground floor are made up of bricks. The open side of the iwan has one or more dalaks (wooden posts). They support the tarmah above, the replica of the iwan on the upper floor which is used during the summer nights. Dalaks are slender and carry large carved capitals which display impressive craftsmanship. Usually dalaks are either hexagonal or octagonal in pattern, 16 cm in diameter. In many houses, more dalaks are found surrounding the courtyard to support the wider suspended gallery and also to roof the larger span of the iwan and to adorn the internal part of the house.

The living room is another rather large room on the ground floor. It is located near the kitchen to facilitate access, particularly in the winter, when it is also used as the dining-room instead of the iwan. In many cases the living room has no windows, and the light is obtained from the courtyard through the glass panes of the door.

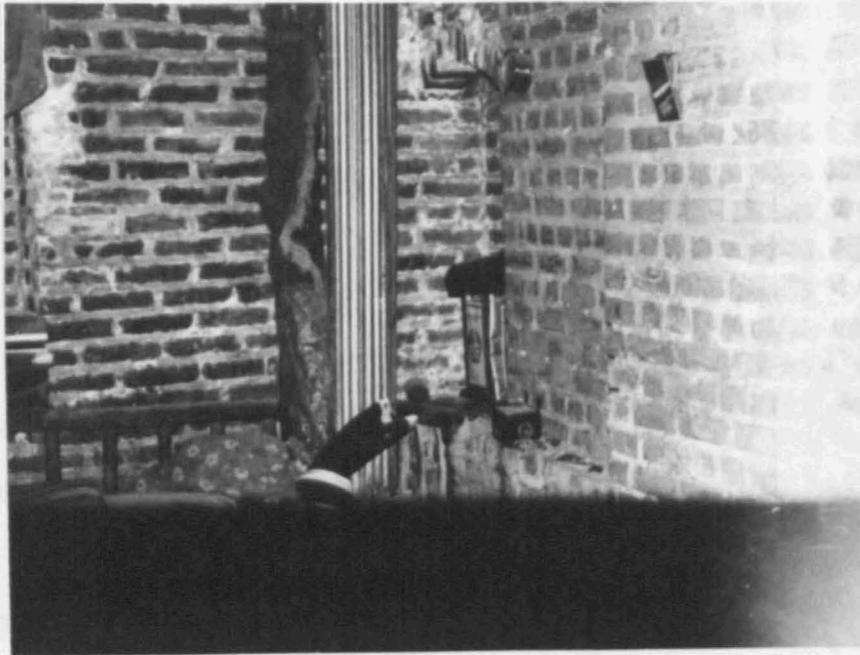
The kitchen, hammam(bathroom) and toilet usually constitute one section located on the ground floor. These utility rooms commonly have no windows and are lit directly from the courtyard onto which they open. They have unpainted hard walls of bricks. Hammam is a suite of complicated heated stone apartments resembling the public bath. It is only the large houses that have this type of hammam however, and most people were frequenting the public bath.

Though the sewerage system has been under construction since the 1950's almost all the traditional houses have septic tanks. Lack of controlled water disposal is largely responsible for the dilapidated appearance of many historical buildings in Baghdad.

To complete the review of the ground floor one has to analyse the sirdab* or basement from which the external atmosphere is almost

* Sirdab: a word of Persian origin composed of two separate words and meaning a place where cool water can be obtained.

Fig. 6.20



a. The cellar zanbur of sirdab, its position being indicated here by the tin



b. A distinct sub-type of courtyard houses on the Tigris with external balconies facing the river

excluded. Sirdab is a large room, usually located beneath the guest-room. It is sometimes several metres below the courtyard level. Sirdab is approached by a separate staircase. Large houses have two sirdabs, the other being exclusively used by the family itself, and thus its ground under the living room. Since the ceiling of the sirdab is above ground level, light is provided through small openings placed near the roof facing either the courtyard or the zuqaq. Fresh air is brought in from the roof by the badgir (air-scoop) or malgaf as known in Egypt. Badgir denotes an early device of letting air into the windowless room as well as into the sirdab. This funnel runs through the thick brick party walls and opens into the sirdab on to a porous water-jar which increases the humidity of the air making it cooler, and incidentally the water in the jar is cooled by the evaporative cooling process. In many instances badgirs finish in a 'zanbur', which is a deep ditch about one metre below the level of the sirdab. This ditch is used to keep fruits and food, cool and fresh (Figs. 6.18A, 6.20a) The external opening of the badgir is one metre above the roof level. All the top openings face north-west, the direction from which the prevailing winds come.⁴¹ Because of their uniformity of design, height and orientation, badgirs combine to bring out the unique silhouette of both the traditional house and the skyline of the townscape of the old Baghdad. The sirdab is used as a siesta place in summer and sometimes a store-room in winter. Apart from its function, the sirdab has its own architectural characteristics. Bricks are used in roofing and paving the sirdab, in a certain delicate fashion. Apart from the sirdab and the utility rooms, the floors of all the other rooms of the house are covered with coloured tiles. The height of the first floor on average is 4 metres.⁴² It is higher than the ground floor mainly to reduce

internal temperature. The first floor is approached by one or more stairs, made up with either bricks or wood constructed on beam bases. The stair that does not take to the first floor, gives access to an intermediate storey below the roof which makes up a small room known as "Kebishkan". The Kebishkan is used as sleeping quarters for servants in the wealthy families, otherwise it is used as a study or storage room. It is about two metres high (Fig. 6.19b).

In contrast to the ground floor which is almost totally built in bricks, the first floor is built with lighter materials, mainly of wood, reed mats and the like. The main element of the first floor is the gallery, which provides the only means of communication to all the upper rooms. The Tarmah, usually above and identical to the iwan of the ground floor, is another important space on the first floor. It is used for having tea in the afternoon and for sleeping during the mild seasons, when it is too hot to sleep inside the rooms and rather cold to sleep on the roof. In case of houses located on the Tigris, external tarmahs (balconies) may be evolved to enjoy the attractive scene of the river. Wood is the main building material of these balconies. They are partitioned at the sides by wooden lattices that provide seclusion while not impeding the view. (Fig. 6.20b).

The rest of the upper floor is divided by brick walls or timber partitions into rectangular bedrooms, one of which may be used for the guests. Their number and elaborations depend on the status of the owner. The rooms that are not on the zuqaq wall have only one side facing outwards onto the courtyard and this is made into a wooden 'curtain wall' to increase the light. The rooms at the zuqaq wall, like the other rooms, have inward looking windows, all of which are of a sliding type, and richly decorated; in addition they have pro-

Fig. 6.21



a. One of the characteristic shanashil



b. External first-floor elevation of traditional courtyard house with semi-circular projection, where porous water jars are put

jecting oriel windows or shanashil; with trellises. Shanashil were a common social necessity in the zuqaqs where opposite rooms tend to overlook one another.

The ceiling of the upper-floor rooms is covered with timber panels, similarly decorated, and sometimes is finished with a mirror, while the other sides are left in a plain or uniform pattern.

Internally, the rooms are painted in certain colours that integrate with the design of the ceiling itself.

Through the shanashil the maximum amount of sunshine is allowed. Accordingly, one of the front rooms is normally used as a tea or relaxing quarter during the winter. Shanashil served to satisfy the curiosity of those who were indoors, and could not be penetrated by the indiscretion of those who were outside.

The stroller on a Baghdadi zuqaq will discover another characteristic external feature in many of the traditional houses, in their upper floor. It is the small semi-circular projection, usually made up of wrought iron bars, located under the shanashil of the kibishkan. The porous water-jars and maybe some fruits are often placed in them to cool (Fig. 6.21a, b).

Roofs are the only areas that are directly exposed to the sun. The terrace came into being not only through reasons of construction but is a living and sleeping quarter during long periods of the year. It is only on the terrace that the cool evenings can be enjoyed after the day-long heat. For reasons of privacy all roofs in old and modern Baghdad are surrounded by a parapet wall to prevent overlooking.

In Baghdad of this period as well as at present, the man who owns a house higher than that of his neighbour is required to surround his roof with some materials such as sheet of tins or brick walls. Through-

out the year the roof is used to hang out washing, keeping the courtyard free for social activities. For roofing the timber beams placed closely together and covered with reed mats, which support an earth layer of 20 - 30 cm thickness, acting as insulation, and forming the roof of the terrace. The earth layer is generally laid at a slight gradient to ease the drainage of the winter rain into the zuqaq by means of long metal gargoyles that extended beyond the walls.

Sanitary Conditions:

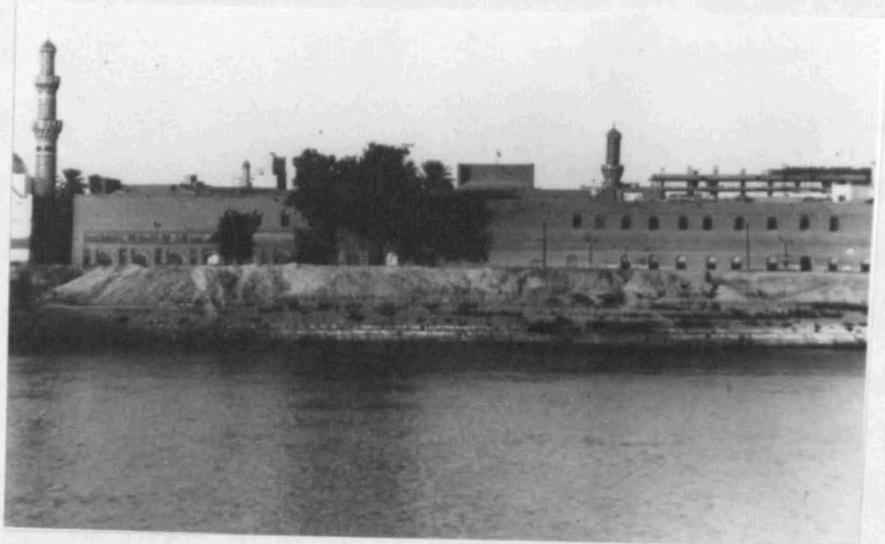
Baghdad and all other Iraqi towns had no municipal or planning organisation in the western sense. This is a fundamental difference which separates the Arab towns as much from the cities of antiquity as from the medieval cities of Europe. Baghdad had to wait until 1869 - 1871 for its first municipal council. Until then it was given over to the arbitrary will of janissaries and their armies. The function of baladiyah (municipality) was the same as those of the usual British city council except the control of the town police remained in the hands of the government.

From 1907 onwards, there was a water supply to all parts of the city. Main zuqaqs and other public places were constantly swept and watered. Refuse was not allowed to remain within the walls of the city.⁴³ Drainage was and still is a serious problem in Baghdad. It is here to the advantage of science and technology to maintain and develop/characterises the old Arab towns .
the narrow zuqaq-system which

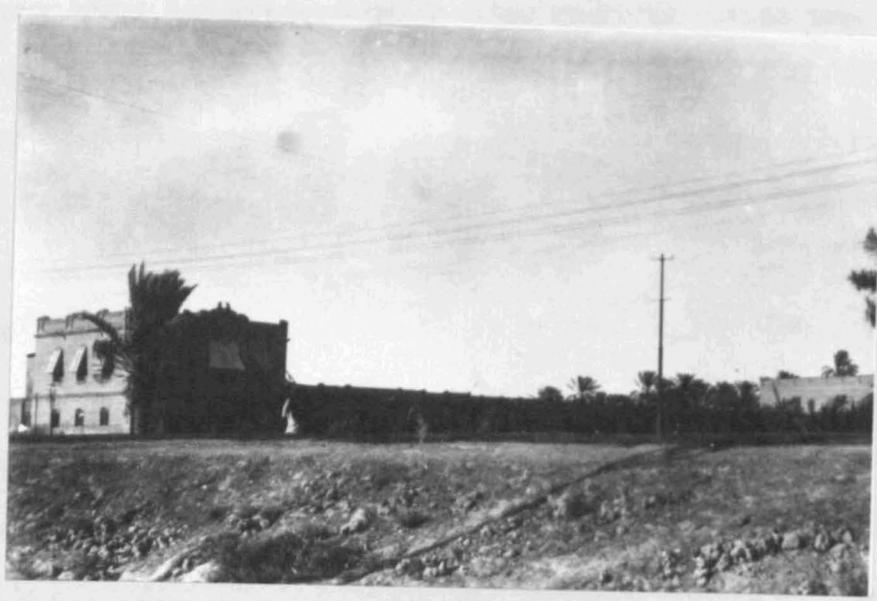
The narrow street is often blamed as the cause of bad health, but the real root of the trouble lies in the lack of efficient drains and sewers. In 1917, only two doctors were to be found in the city, apart from the municipal hospital at al-Karkh which had its own staff of nurses. Gradually organisation of medical and sanitary work as known in

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Fig. 6.22



a. Al-Mustansiriyah College and its surroundings one of the surviving medieval fabrics in the business core



b. The extramural building of al-Khaiyalah Barracks

the western countries came into existence, but Baghdad's lack of drains presented a peculiar problem of its own. In 1917, cholera killed hundreds of inhabitants including General Maude who led the British troops in Mesopotamia. In 1919, 600 inhabitants were killed by a plague, due to the overcrowded condition of the city.

To improve the health services, a new isolation hospital was built at al-Karkh in 1919; furthermore al-Majidiyah hospital, north of Bab al-Mudham on the Tigris became one of the most up-to-date health institutions in the Arab countries.⁴⁴ It initiated the extramural development of the fringe-belt on the Rusafah Side.

The Commercial Centre: (Figs. 6.1, 6.8a,b)

In this period the commercial centre of Baghdad was occupied by commercial, manufacturing and administrative establishments. The upper classes were also residents in this central area, whereas the lower classes were relegated to the periphery. Mosques are the best representatives of the public buildings in the commercial centre of Baghdad. They and other public and private houses represent all phases in the evolution of Arab architecture. The majority of bazaars, are still functioning. Thus the plan of the medieval town has been preserved in essence. The central bazaar area had compressed space in the narrowness of its *zugags* and *sahahs*, resulting in a high population density. (Figs. 6.1, 6.8) As the main bazaar network was located on both sides of the Tigris developing from the bridgeheads where the grand mosques and main *khan* agglomeration are concentrated. Bazaars had the straightest streets in traditional Baghdad. The River has influenced their layout. This was because of the importance of river traffic. The main axis of bazaars either lead to the river or run parallel to it. There were eight landings, primarily located with the ⁱⁿ

commercial centre. Al-Mustansiriyah College for instance had changed its function to be the customs office of the city, having its own quay.⁴⁵ The river also attracted many metropolitan khans, which developed their main entrances towards the Tigris. After the 1940's, and as a result of the fact that vehicular traffic became dominant, most of these khans had re-orientated their entrances towards the land traffic lines i.e. bazaars and streets, and built up their river entrances (Fig. 6.8). The bazaars of Baghdad catered exclusively for pedestrians. The 'hustle' and 'bustle' in Baghdad's bazaars, gave an air of informality, and the feeling of integration between man and his city. Generally, bazaars were miles of great covered arcades and domes, under which almost all the trade of the city was done. Some of these bazaars were new and in good repair, vaulted with brick works; the others were merely covered with flat beams supporting a roof of mats and palm thatch.⁴⁶ Despite the fact that land use in Baghdad was highly mixed, the commercial bazaars developed a specialised section. The principal bazaars, all of which still function, were al-Shurjah, al Maidan, al-Qumash (cloth bazaar), Suq al-Haraj and Suq al-Sarai. Some bazaars had crafts, and usually they were named after them. Craftsmen engaged in blacksmith's work, carding, spinning, weaving, tanning, cloth-dying and other industries were subjected to certain taxation during the Ottoman occupation. Suq al-Safafir (coppersmiths), Suq al-Saghah (silver and goldsmiths) Suq al-Sarrajin (saddlery) Suq al-Khaffafin (shoemakers) etc. are examples of the craftsmen bazaars (Fig. 6.8).

The number of shops and khans within the bazaars of Baghdad had been variously estimated ranging between 1,200 - 4,000 shops and between 200 and 600 khans, over a period of time.⁴⁷ Thirty khans were metropolitan, the finest of which is the covered Khan of Urdhumah or Mirjan.

Before the construction of al-Rashid Street, it adjoined the mosque of Mirjan. The vaulted roof of this construction is a fine specimen of saracenic brickwork and like the mosque of Mirjan, bears the date of 1356 A.D.⁴⁸ Al-Karkh also had its own always for grains, flanking the main caravan street between the bridgehead and al-Kadhimiyyah Gate. The old city still has many khans - providing facilities for entire caravans - with their stables and warehouses on the ground floor and the sleeping rooms open to the gallery which runs around the central courtyard, on the upper floor. Following the First World War, many new shops and canteens emerged in different parts of the city catering for the British troops and the new residential areas. The commercial centre had maintained its specialised and mixed open markets. The main one was al-Maidan, near the citadel, where the daily horse market took place in the summer before the sunrise at which hour the temperature is bearable (Fig. 6.8). Mules and donkeys could be purchased at this spot.⁴⁹ The sheep market occupied the area surrounding the minaret of Suq al-Ghazil.⁵⁰ Contiguous to the bazaars and some of the khans, open spaces had been developed to be used for meetings and temporary stalls.

The comparison of Baghdad of this phase with that of the 17th century shows that considerable commercial progress, both quantitative and qualitative had been made. Foreign trade has grown, as transport had slightly improved. The commercial centre of the city had for the first time banking activities. Banking was represented by the Imperial Ottoman Bank, opened in 1907 and the Eastern Bank in 1912.⁵¹ Money changers (sarrafs) were mainly Jews but now are Arabs.

Baghdad, however, did not have its own paper money at the time. A few foreigners had established eleven firms in Baghdad's centre. These

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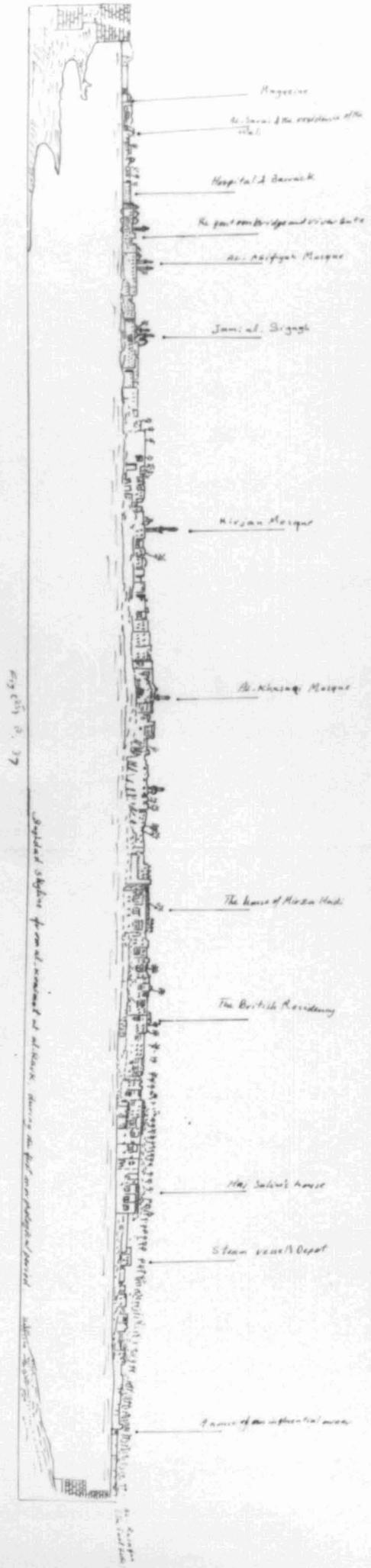


Fig 6.23 Baghdad's skyline from al-Kraiat during the first morphological phase. (after F.Jones).

indicate that the city began to integrate in the international commercial and financial network. Baghdad moved from subsistence to market-orientated agriculture. Of course this transformation in commerce, and growth of population was part of a wider change in the political, social and cultural life of the country starting by the end of the 19th century and increasing after the first world war. It was reported that the value of Baghdad's export to India and Europe was in 1907 £153,304 and £548,668 respectively. Almost all the exported merchandise were agricultural and animal products.⁵² To maintain the traffic flow in the commercial centre, Britain had improved the awkward entrance of the main bazaar by cutting through a new street which connected the bridgehead with the new street.⁵³

The Religious Development:

The skyline of Baghdad was characteristically flat, punctuated only by domes and minarets (Fig. 6.23). Tabbat al-Kurd Mahallah was exceptionally higher than other mahallahs (Figs. 6.11.). This is owing to the fact that the houses had frequently been re-established on the uneven level of the ruins of earlier ones, without any clear plan. The rubble of the houses was also heaped upon the surface of the roads. As a result of such successive re-establishment of houses, the ground level mounted, and this was helped by the fact that the houses were being built entirely out of mud bricks. The dominance of horizontal forms in the townscape of Baghdad is in harmony with the nature of the country, while the height of contrasting minarets gave unity to the predominantly horizontal composition. Mosques and shrines, the principal buildings of Baghdad at that time dominated the skyline of Baghdad's mahallahs. In flat country such as Mesopotamia, the sky is

the dominating feature of the landscape. The dominating influence of the sky in the landscape tends to minimize the significance of the third dimension and helps to explain the prevailing two-dimensional representation so characteristic of the townscape of the Arab town. The absence of lofty building in Baghdad can be also attributed to religious doctrine. Islam is hostile to lofty constructions which are symbolic of pride and arrogance.

The first two four-storey buildings were built in Baghdad by Germans at Salihiyah, then a fringe area in 1918. They are still there near the T.V. and Radio Station. Mosques are always centrally located in their surroundings. It was only possible to gain a true idea of the townscape of the traditional Baghdad from the height of their minarets. A minaret is a fundamental and symbolic place in the Baghdad landscape. It marks the identity of the mahallah. Mosques occupy central sites, attracting all residential, commercial, and craftsmen quarters. A minaret always serves as guidance to a place of destination in the even plain landscape.

The location of the grand mosques reflects the importance of religious functions in Baghdad. The chief or Friday mosques in the area between al Maidan mosque near which there is still a main sahaḥ, and the mosque of al-Khasaki occupies the very core of the city of Baghdad.

Consequently, most of the mosques of this central area are obscured by the shops on their street floors and only a keen eye is likely at first glance to discover the mosques' entrances, which provide pleasing glimpses of clean and uncluttered floors. As a consequence of the central location of mosques, a common sight in Baghdad adjacent to, or incorporated with a mosque is a sizeable half-open coffee-house.

Hammams are also to be found near the mosques. A Moslem could not conduct his prayer without a ceremonial washing (ablution). Thus hammams like mosques and bazaars acquired a central location.

The covered or open spaces associated with mosque represent the main spaces for the people to meet, though they are not as big as the public squares (piazzas) in the European town. Probably this was because the Arab traditionally tried to maintain maximum security in all of his private as well as public buildings.

Owing to both its geographical position and the continued religious importance the shrines of al-Kadhim, Abu Hanifah and Sheikh Abdul Qadir Baghdad has survived its very troubled history. Apart from their architectural attraction, these shrines are goals for pilgrims from all over the Moselm world. To reach them one had to make one's way through the narrow and intricate streets and alleys (Fig. 6.17).

Al-Kadhimiyyah, then a little town, had sprung up around the tombs of Musa and Muhammed, the Imams. The shrine is located in a pretty spot surrounded by walled gardens, above the trees of which the wonderful gold-plated domes and minarets of the shrine rise.

This township, particularly sanctified by the followers of the Shiah, division of Islam, contained a large community of Persians. It was said that of the 6,000 inhabitants at least 5,000 hailed from Persia. Physically the town resembled very much the poorer mahallahs of Baghdad.⁵⁴

There is a big discrepancy in the figures given for Baghdad's mosques during this period.* In 1909, Baghdad was said to have 44 mosques in al-Rusafah and 18 in Karkh.

However, only 30 mosques were distinguished by the characteristic minarets, the rest being merely local masjids. The most ancient of these mosques was built in 1325. It is the Caliph's mosque located in the commercial centre (Figs. 6.1, 6.8) and was beautifully rebuilt in the 1960's. Mirjan Mosque on al-Rashid Street and not far from the latter mosque, is very rich in arabesque work on its surface, dating from the 14th century. The door has a lofty pointed arch, bordered on both sides by rich bands exquisitely sculptured, and having numerous inscriptions. Al-Khasaki mosque, also in the commercial centre is supposed to have been an old Christian church. It is distinguished by its niche for prayer (mihrab).

*

The following figures were given for the mosques of Baghdad at different dates:

1882	46 jamis	and	36 masjids
1884	93 jamis	and	42 masjids
1895	100 jamis	and	_____
1918	86 jamis	and	64 masjids

The building in its present state bears the date of 1682 AD but the sculptures which it contains belong probably to the time of the early Abbasid caliphs. The mosque of al-Wazir in al-Rusafah at the bridgehead of al-Shuhada, has a fine dome and lofty minaret; the mosque of al-Maidan is another noble building in the northern part of the East Side.

In addition to mosques, Baghdad had its churches and synagogues. In 1918 there were 22 synagogues. These were concentrated in the central mahallahs of al-Rusafah, particularly in the Jewish and Christian mahallahs. Even now the largest concentration of the churches of the city, is in the Christian mahallah. The name Agid al-Nassara (the Christian mahallah) is still in use, although this is no longer primarily a residential area.

The main churches still are, the Armenian church built in 1844 at al-Maidan, Gregorian church being joined with an Armenian orphanage; the Chaldean, the Catholic and the Syrian catholic churches. The latter was built in 1842. A large Latin or Roman Catholic Church was built in 1866 to replace the smaller building of 1721. It has a large and lofty dome, 32 m high, thus it could be seen from the roofs of any mahallah in the city.⁵⁵

The Fringe Belt (Fig. 6.1):

Almost all the tombs and some of the shrines of Baghdad were peripherally located. Some of them were isolated from the city proper by vast areas of ruins. In al-Rusafah the tombs of Sheikh Majnun, Sheikh Omar al-Sahrawardi, Said Ibrahim and Sheikh Thannun were intramurally concentrated between Bab al-Wastani and the mahallah of Khan Lawand, to the east of the built-up area but within the walls of the city. The tomb of Sheikh al-Ghazali, is located south-east of walled Rusafah and is

surrounded by a sizeable Moslem Cemetery. In al-Karkh on the other hand, the tombs and shrines of Sheik Maruf al-Karkhi, Zummurud Khatun, Yosha the prophet, Sheikh Junaid and Sheikh Bahlul Danah, were extramurally located to the west of the walled area. The cemeteries of Baghdad occupied sizeable areas, most were either surrounding or annexed to the already mentioned tombs. The Moslem burial grounds were intramurally located within the walled areas of Rusafah, while they lay outside the walls in al-Karkh. Almost all these cemeteries belong to Sunnah Moslems. Shiah Moslems bury their dead in al-Najaf, beside the tomb of Ali the Imam.

This is because of traditional religious beliefs. The Shiahs, however, have ^a cemetery underneath the shrine of al-Kadhim and a small burial ground in the Baratha area, near to the modern railway bridge. The Jewish burial ground was also located within the walled area at al-Rusafah, between the cemeteries of Ghazali and al-Sahrawardi. Christians had developed their cemeteries extramurally at al-Rusafah, in the present area of Sahat al-Taiaran. From east to west there are British, German and Armenian cemeteries now near the commercial centre of the city, surrounded by more development. In addition, there is the mentioned British war cemetery in al-Waziriyah, near the railway line to the north of the then walled area. The walls of al-Rusafah, a clear fixation line in the development of the fringe belt had been pulled down in 1869-1872.. In return the city received not a boulevard but an enormous ring of debris, part of which is still seen today, perhaps in the same condition as when Midhat left it. The remains of the walls formed with the Tigris an area about two miles long with an average width of less than two miles. About a third of this area in the north-east was either vacant or covered by ruins or orchards.⁵⁶ Bab al-Sharji (the South Gate) was

changed to be St. George's Church, by the British Army. It was knocked down in 1937 to facilitate the traffic flow in this direction.

The wall of al-Rusafah was pierced by the roads leading to Diyala Liwa and Persia to the east, Salman Pak and Basrah to the south, and Adhamiyah, a small outlying settlement some 4 km to the north.

The walls of al-Karkh were half ruined and surrounded by big orchards. Several public buildings were built with the bricks of this walls. The remnants of the wall were used as a dyke against floods. The city of Baghdad was flooded five times in this period. As a consequence a new dam was constructed in 1910/1911.⁵⁷ This construction has engulfed almost all the building development that took place in Baghdad before 1956. This dam collapsed in the flood of 1911. The British restored it again and added a new dam commencing from the south eastern corner of the wall to the south-east until it reached the right bank of the Diyala river. Several new buildings emerged extramurally in different parts of the city. In 1870 the surviving Barracks of al-Khaiyallah were built extramurally along the road heading towards al-Adhamiyah (Fig. 6.22b). The northward growth observed inside the wall continued across it. Al-Majidiyah Hospital and the mental hospital were built in 1870 and 1900⁵⁸ respectively expanding the fringe belt to the north. The former has been replaced by a 14-storey hospital annexed to the nearby medical school, whereas the latter was cleared in the 1960's to form a public square. In 1910 al-Shah hospital (then Mir Elias) had been built to the north of al-Majidiyah Hospital. Since then this area became a medical headquarters for the city. They are now part of the Inner Fringe Belt. In the south of al-Karkh another hospital was built between the Tigris and the railway

station built by the Germans. Almost attached to Bab al-Mudham a great khan for horse-carriages was constructed. It lay next to a police station. From this khan one could hire a donkey or mule to visit the shrine of Abu-Hanifah in Adhamiyah. Its establishment indicates the integration of Baghdad with its northern suburban settlement of Adhamiyah.

Several police stations were developed along the main roads between Baghdad and its surroundings, such as that on the road running to the Kerradah peninsula (built in 1914) and the one on the road leading to the tomb of Sheikh Junaid in al-Karkh. They were built on state-owned land to the security of the new extramural development. This in turn encouraged some wealthy people to build their houses in these directions.

A few coffee houses were built in the al-Battawin area south of the wall and horses were used to convey the clients. Military drill-grounds were built outside the walls of al-Rusafah near both its north-eastern and south-eastern corners, using open government-owned areas.

Some tanneries such as that of Bab al-Sharji were also built in the fringing belt. Likewise the brick kilns of Baghdad were located outside the built-up area, being inside the walls at al-Rusafah, concentrating in the north-east section of the city, but lying in al-Karkh to the north east of Sheikh Maruf al-Karkhi outside the walls.

The houses on the outskirts of the city were of a rural type. Their residents coming from the countryside. Some influential families also had developed their mansion-type houses, either within already existing orchards or along the Tigris. This can be observed in both the southern and northern areas of the city and on both banks of the Tigris.

The new railway stations had been built isolated in the ruined peripheral areas. Baghdad East Station was located near al-Tullisim Gate, Baghdad North Station to the north-east of the wall, and Baghdad West, the surviving central station to the west of al-Karkh. The lands here are state-owned and there was no obstacle to such accretions.

The first two stations have recently been dismantled. They were replaced by the present Baghdad East Station, built within what is now the present Inner Fringe Belt. Baghdad West station is still the main railway station of the capital.

The fringe belt has been expanded further when more than 30 houses were built in al-Karkh, near Baghdad West Station. Some other houses were also built near the Baghdad East Station in al-Rusafah, likewise to house some of the railway employees. The average size of these houses were between 80 - 150 sq. m.

Finally Baghdad had its own orchards, palm groves and cropped areas stretching alongside the Tigris and elsewhere around the town. These cultivated areas gradually changed to solidly built-up area. Land speculation contributed to such development, which in turn increased the wealth of the wealthy landlords. By then Sinak, the present Christian mahallah, Battawin, Iwadhiyah, in Rusafah, Ataifiyah, Jaifir, Salihiyah and Karradat Mariyam, now well populated mahallahs, were noted for their orchards and palm groves. Baghdad was flanked by a belt of palm groves 800 - 2000 m⁵⁹ wide on both sides of the Tigris upstream and downstream. From the above it can be seen that Baghdad's plan changed little in the period 1869 - 1920, compared with the fact that its population had been more than doubled. The built-up area of 16th century Baghdad had remained practically the same for four centuries. No further

expansion was needed to cater for any motor traffic, as all parts of the city were within walking distance. The main developments occurring in this period were generated either by the introduction of new functions, or by modernization processes imposed on the already existing form, to cope with the new functions. These processes took place simultaneously in the centre and the fringe belt. The central developments stabilized the significance of the traditional core of the city. Fringe belt developments on the other hand were either of the accretionary or repletive kind in the extra and intramural parts respectively. However, all these developmental processes, additive and replacement, were taking place while sizeable urban fallow persisted.*⁶⁰

* The term Urban Fallow is used here to indicate obsolescence that resulted from the decrease of population and resulting neglect within the walled area.

1. George K. Kirk, A Short History of the Middle East, London (1948).
105. S. H. Longrigg, Four Centuries of Modern Iraq, Oxford (1925) 317.
2. A. al-Wardi, Lamahatun Tarikhiyah Min Tarikh al-Iraq al-Mussir,
(Social Aspects of Iraqi Modern History) Baghdad 2 (1972) 248 -
249; Fuad Baali, Relation of the People to the Land in Souther
Iraq, University of Florida Monographs, 3 (1966) 11.
3. Charles Issawi, The Economic History of the Middle East, 1800 -
1914, (A Book of Readings) ed. by Charles Issawi, Chicago, London,
(1966) 137; George L. Harris, Iraq, its People, its Society, its
Culture, New Haven (1958) 20.
4. Longrigg, op. cit. (1925) 20.
5. Yusif Izzidin, Fahmi al-Mudarris, Cairo (1970) 492; al-Wardi, op. cit.
2 (1972) 57.
6. Muhammad al-Hashimi al-Baghdadi, al-Muktataf, L. (1917) 28.
7. M. Jawad and A. Susa, Dalil Kharitat Baghdad, Qadiman Wa Hadithan
(A Guide to the Plan of Old and Present Baghdad) Baghdad (1958)
231; A. al-Allaf, Giyan Baghdad Khilal al-Ahdal-Abbasiwal Ahd
al-Ottomani al-Mutakhir, (Baghdad's Bondmaids), Baghdad (1969) 155.
8. Kirk, op. cit. (1948) 106.
9. Al-Baghdadi, op. cit. (1917) 381.
10. M.R.G. Conzen, Alnwick Northumberland, A Study in Town-Plan Analysis,
The Institute of British Geographers, 27 (1960) 59.
11. Longrigg, op. cit. (1925) 317.
12. Conzen, op. cit. (1960) 61.
13. L. J. Hall, The Inland Water Transport in Mesopotamia, London,
(1921) 134, Walter B. Harris, From Batum to Baghdad, Edinburgh,
(1896) 291.

14. A. al-Duri, Baghdad, Encyclopedia of Islam, 1 (1960) 907,
S. H. Longrigg; Iraq, 1900 - 1950, A Political, Social and
Economic History, Oxford (1953) 11.
15. M. F. Darwish and I. Dinkur, Al-Dalil al-Rasmi li al-Mamlakah
al-Iraqiyah (The Official Directory of the Iraqi Kingdom)
Baghdad (1936) 108.
16. Xavier De Planhol, The World of Islam, (Le Monde Islamique: essai
de Geographie religieuse) New York (1959) 20. M. Majid, Ahkan
Tasjil al-'Iqar (Requirements for the Registration of Real
Estate), Baghdad (1968); The Laws and Regulation of the Ministry
of Municipalities, Article No. 46, (1964) 51.
17. A. al-Hilali, Mujam al-Iraq (The Dictionary of Iraq) Beirut, 2
(1956) pp 155 - 156.
18. A. al-Hasani, al-Iraq Qadiman Wa Hadithan, (Iraq Old and Present),
2nd edition, Saida (1956) 116.
19. Longrigg op. cit (1953) 64.
20. Al-Allaf, op. cit. 146.
21. Richard Coke, Baghdad, The City of Peace, London (1927) 298.
22. Harris, op. cit. 291.
23. Taha al-Rawi, Baghdad. Madinat al-Salam, (Baghdad, the City of
Peace), Baghdad (1944) 66.
24. Al-Zawra Newspaper, No. 9, 1289 (19.8.1869).
25. Al-Duri, op. cit. 907.
26. Harris, op. cit. 299.
27. Longrigg, op. cit. (1953) 7.
28. Coke, op. cit. 298.
29. Coke, op. cit. 304.
30. Coke, op. cit. 304.

31. Hashim al-Adhami, Tarikh Masjid Abu Hanifah wa Masajid al-Adhamiyah, (The History of the Mosque of Abu Hanifah and the Mosques of Adhamiyah), Baghdad, 1 (1964) 23.
32. Coke, op. cit. 304.
33. Longrigg, op. cit (1953) 50; Coke, op. cit., 58, Hall, op. cit. (1921).
34. J. E. Spencer, House Types of Southern Utah, The Geogr. Rev., 35 (1954) 444.
35. V. Miller, Types of Mesopotamian Houses, Journal of American Oriental Society, LX (1940) pp 151, 158.
36. Edward T. Hill, The Hidden Dimension, London (1969) 148.
37. Hassan Fathi, Planning and Building in the Arab Tradition: The Village Experiment at Gournah, Cairo (1963) pp 217 - 219, B. Allsopp, A History of Classical Architecture, London (1965) pp 170 - 187. R. J. Solomon, Procedures in Townscape analysis, Annals of the Association of American Geographers, 56 (1966) pp 254 - 255.
38. Abbas al-Azwi, Tarikh al-Iraq Bain al-Ihtilalain, (The History of Iraq between the two Conquests) 8 vols; Baghdad, (1935 - 1965) 2: 97 - 98; J. Bailie Fraser, Travels in Koordistan, Mesopotamia, etc.... London (1834) pp 212 - 213; Jovan Kronic, Architectural Traditions and New Architecture of Iraq, Sumer, A Journal of Archaeology and History in Iraq XVIII (1962) p 37.
39. M. al-Alusi, The Outstanding Characteristics of the Iraqi House, Al-Amiloon Fi Al-Naft. Magazine, Baghdad, Vol. 36, January (1965); p 3 (in Arabic).
40. Dr. N. Kisrawi, The Basis of the Symbolic Design for the Arab Town and the ideal Architectural Design, the 11th Arab Engineers Conference, Kuwait, May(1969,) . 48 (in Arabic).

41. Al-Azawi, Oriental Houses in Iraq, in Shelter and Society, ed. by P. Oliver, London (1969) 94.
42. Dr. H. Makia, The Architectural Elements of Baghdad in the late Abbasid Period, printed in Iraqi Engineers Association, Baghdad, An Illustrated Historical Survey, Baghdad (1969) 228.
43. Coke, op. cit. 58; Longrigg, op. cit. (1953) 50.
44. Coke, op. cit. pp. 304 - 306.
45. Al-Allaf, op. cit. 19
46. Harris, op. cit. 302.
47. Al-Adhami, op. cit. 212; Al-Duri, op. cit. pp. 306 - 307.
48. H.C.R. Baghdad, Encyclopedia Britannica, iii (1898) 333.
49. Harris, op. cit. 306.
50. Y. Sarkis, Mabahith Iraqiyah (Iraqi Researches in Geography, History and the Plans of Baghdad), Baghdad (1948) 133.
51. Issawi, op. cit. 184, Longrigg, op. cit. (1953) pp. 28 - 32, 53.
52. Issawi, op. cit. 184.
53. Coke, op. cit. 296.
54. Harris, op. cit. pp. 317 - 318.
55. Sarkis, op. cit. 133.
56. Al-Duri, op. cit. 907
57. Al-Azawi, op. cit. 8: 200 - 201.
58. Al-Allaf, op. cit. p. 30.
59. Al-Baghdadi, op. cit., p. 375.
60. Conzen, op. cit., 1960, pp. 59, 81, 94.

The Third Morphological Phase: 1920 - 1936

The country had entered the third phase of civilization. The first phase had been the great days of Babylon, Assyria and Egypt, when civilization commenced in Mesopotamia and the Nile Valley; the second when the country was surrounded by more potent centres of civilization in the great days of Greece, Rome, Byzantium and Persia; the third when the gravity of civilization centres shifted to the Atlantic and France, Spain, Britain and the U.S. A. became the foremost states. Baghdad's situation derived from the first phase, its fame, as already seen in the historical part belongs to the second while the third phase found it fallen. After this Baghdad had prospects of a promising future commencing with the reign of Midhat Pasha.

Mesopotamia was occupied by Britain from 1917 to 1921, subjected to the British mandate from 1920 to 1932, and became independent in 1932.¹ Baghdad and the whole country faced many changes. This is particularly the case with Baghdad's relations as the capital of a new nation state.

In this period the city began to loose some of that provincial look that is still obvious in Basrah and Mosul, the other main urban centres of Mesopotamia. This was natural as Baghdad became the capital of the country, based on its situation and relative prosperity.

The participation of Europeans in the administration of the country and the influence of the British army which kept a western style of life are of particular significance.

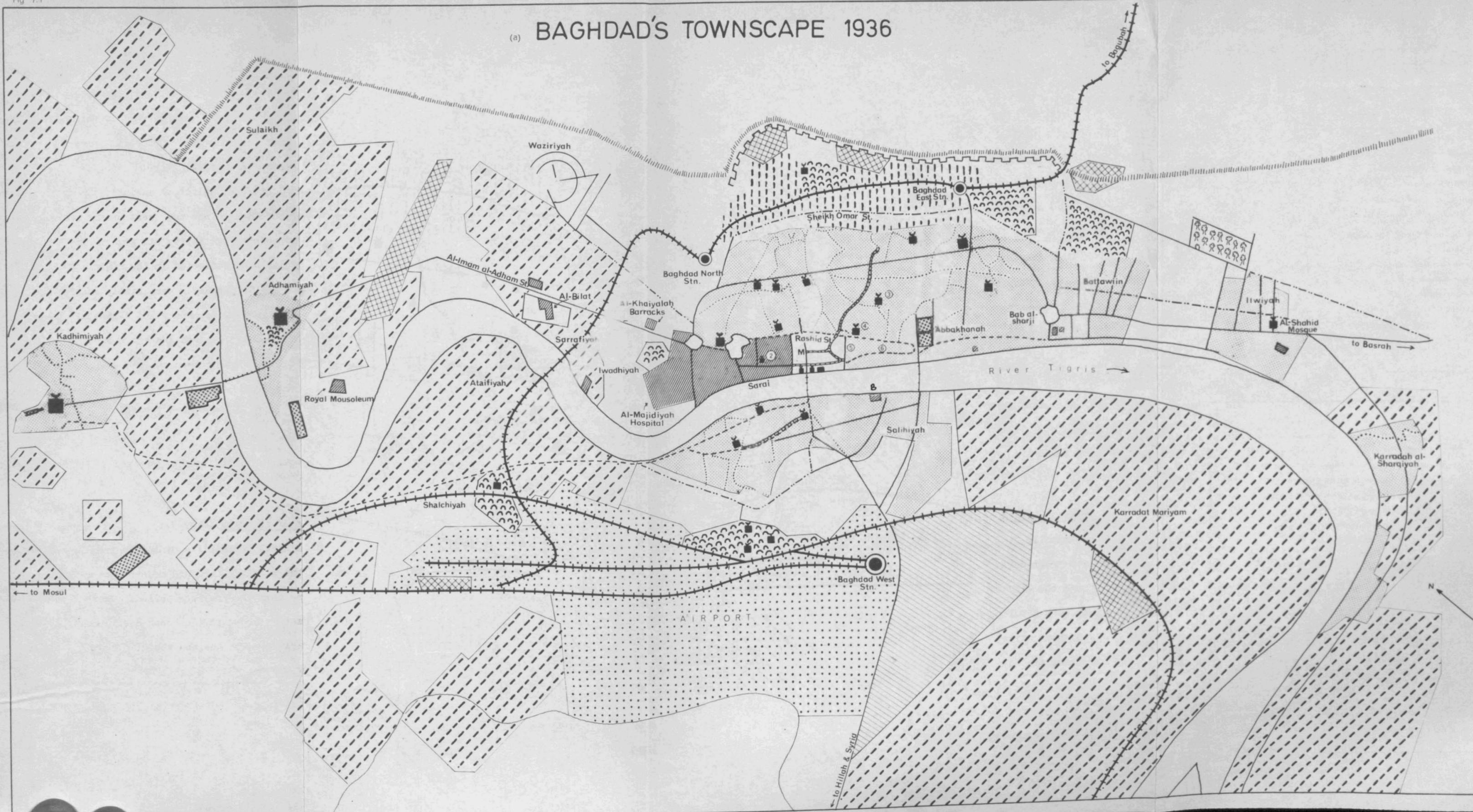
Baghdad, overshadowed by other cities for more than six and a half centuries, became the capital of a growing state. The achievement of the nation's independence put Baghdad in a position to fulfil new functions of an administrative, judicial and above all commercial

nature and also to provide other specialized services. This has led to considerable morphological changes reflected in the emergence of peripheral streets, the carving of some break-through streets, and in the building fabric of the city. The new streets have been developed either to serve the new central functions or the new residential areas emerging around the Old Town.

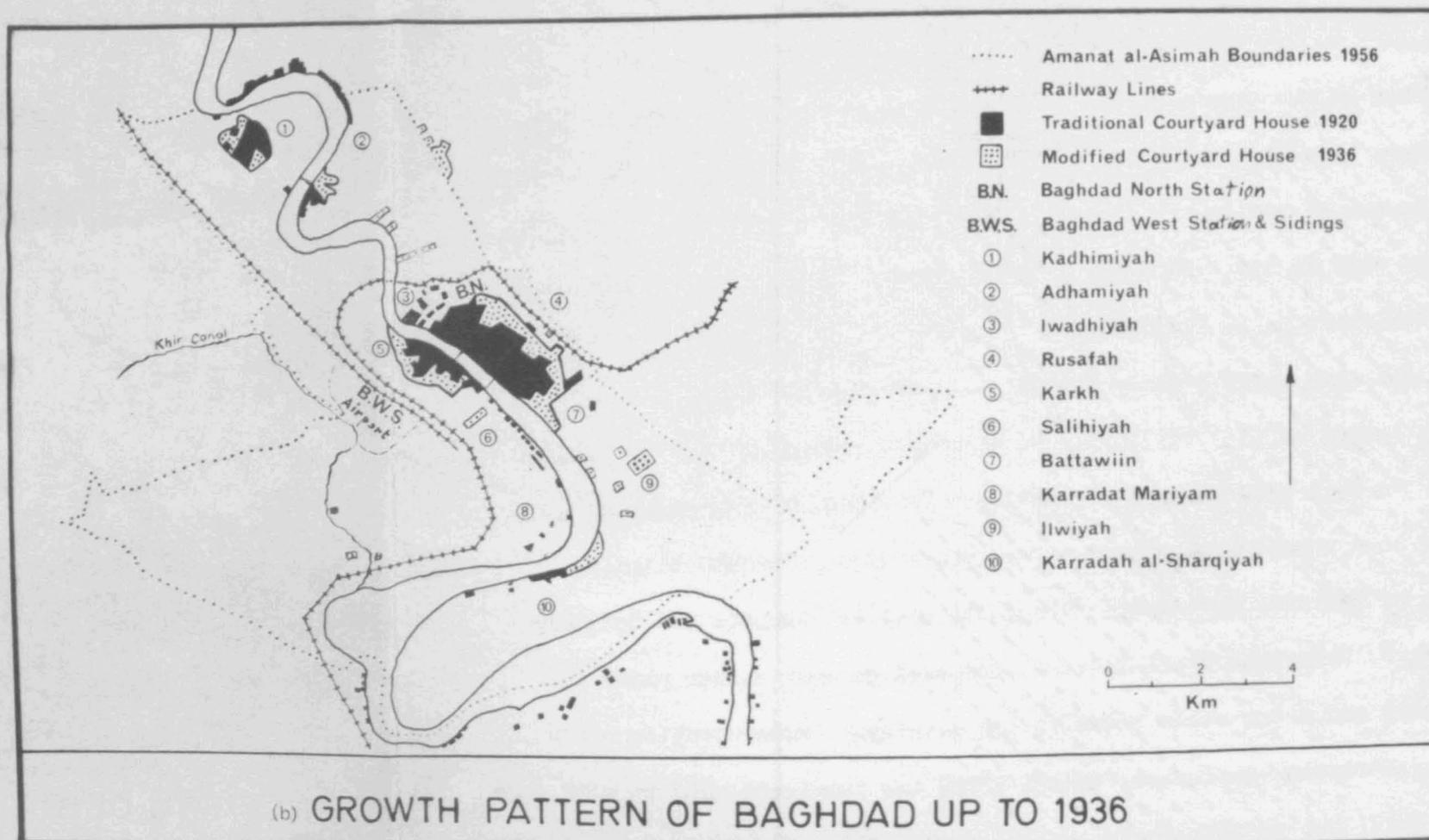
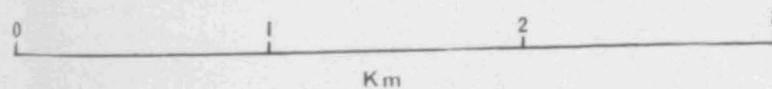
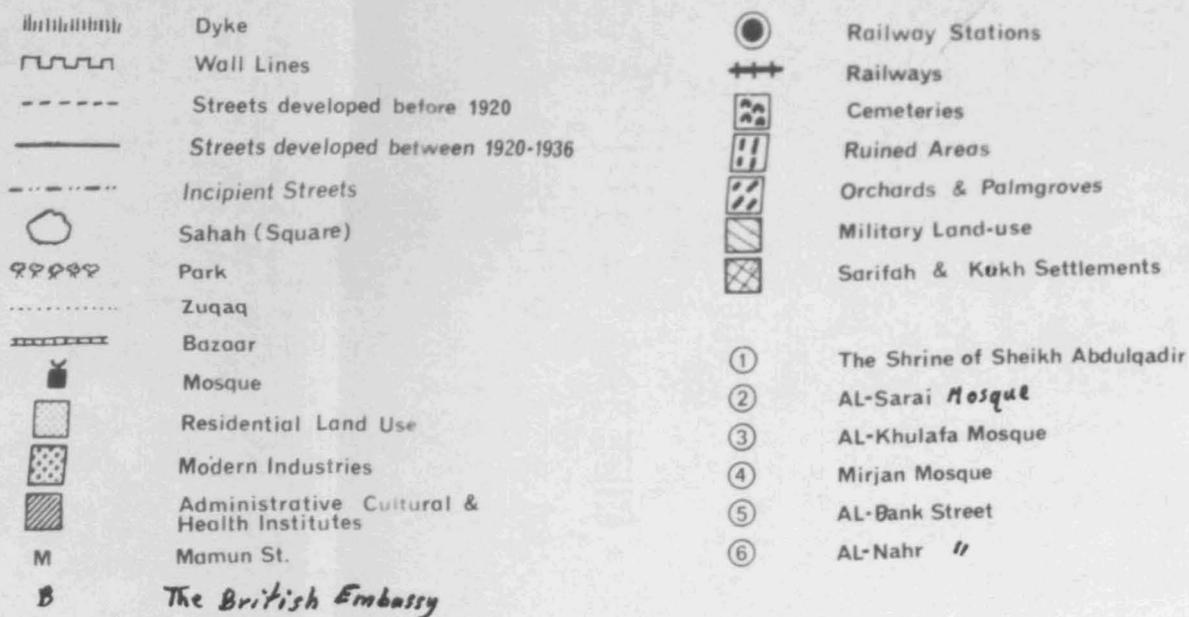
The capital of the new state attracted people from all over the world for commercial, social, cultural and political purposes. The presence of these foreigners, mainly Europeans, in turn had its effect on the structure of the city albeit to a limited extent, yet in striking contrast to the inherited traditional forms since European civilization was so very different in many respects and especially in technological outlook. The economic development of Baghdad in this period was still secondary on the whole, and was limited to the exchange and services inherent in the function of a capital. Embassies increased in number, and were usually located in the richer mahallahs. Consequently, richer people sought contiguous sites, influencing thus the spatial pattern of the city in its evolution. By the end of the 1930's 14 legations had headquarters in Baghdad.²

All this emerged while Baghdad and the rest of Mesopotamia's towns lacked as they still do, the necessary authority, let alone the money to deal with these new problems. The idea of city planning has never been considered in Iraq before the 1950's, when the planning firms of Doxiadis Associates (Greek) as well as Minoprio and Spencely and P. W. McFarlane (both British) prepared general master plans for the city and a few other towns in the country. Modernization under strong European influence, though slow, was inevitable and in many ways desirable, but unfortunately, as has been seen in Baghdad's first phase, it has often meant the destruction of many fine buildings such as mosques

(a) BAGHDAD'S TOWNSCAPE 1936



BAGHDAD'S GROWTH PATTERN 1936



and bazaars. The break-through* street of al-Rashid is an example of a street cutting its way remorselessly through an array of important historical buildings. The assertiveness of modern commercial architecture in the business centre is another.

Unfortunately and because of political instability during the period 1920 - 1936 neither Baghdad nor the rest of Mesopotamia achieved what was expected. The country had thirty six governments during this time. Such instability has been reflected in the overall development of the country. Hospitals and dispensaries were barely maintained, schools could be increased only slightly, secondary and technical education expanded far less than the public desired and the needs indicated.

Until the end of this period or even the end of the second world war, Baghdad remained essentially an Arab city, though some alterations or modifications were carried out. All Baghdad's houses and public buildings were traditional in style. Much of Baghdad's charm and architectural beauty within the confines of its traditional parts survived.

The growth pattern of the city: (Fig. 7.1)

Culturally, the society was still dominated by traditions. Economic life was progressing but slowly. Cars and modern factories began to influence the city more than the previous period. The response of the city to such development is shown in the house development and in the new vehicular street system. The new and the old, though sometimes integrated, are easily recognizable and reflect the new needs of the

* The term "break-through" street is adopted in the current study to indicate a particular type of street which cuts through the traditional parts of the city. Almost all the break-through streets were constructed without a comprehensive guiding plan and reflect the influence of Westernization. All these streets have been forcibly introduced to cope with vehicular traffic.

slowly progressing society. As in the medieval European town, the social life, functional structure and physical development were still revolving around the central religious institutions. But it is pertinent to point out that while European towns developed gradually, Baghdad and most other Arab towns were suddenly faced with the technological development of the recent era. Accordingly, one can observe the obvious discrepancy between the old and new forms.³

As has been seen in the historic part, during the long Ottoman occupation 1638 - 1917 Baghdad showed a clear tendency towards physical shrinkage. However, in that period, it is possible to identify a definite urban form with traditional Baghdad (Karkh and Rusafah) acting as a main urban centre and Kadhimiyah and Adhamiyah playing the role of suburban satellites. Now, however, Baghdad began to expand north and southward along the streets of al-Sadun and al-Imam, al-Adham and also along the Tigris. Furthermore, Kadhimiyah and Adhamiyah have experienced physical growth in various directions.

For the first time Baghdad broke down the medieval semi-circular pattern which had evolved within its walls. It changed into a longitudinal pattern running along the Tigris, dictated by the river, the degree of security, and the economic prosperity of the inhabitants. This longitudinal pattern was to be maintained until the city freed itself from the threat of floods in 1956, which accordingly led to east-west growth, a phenomenon still strikingly operating today.

In 1936, however, growth was uncontrolled. The dams played the same part as the walls in previous periods. They confined the growth pattern especially on the East Side, while al-Karkh was free from flood owing to natural levees, and the embankments secured the Syrian and Hillah highways as well as the Mosul railway. The city's diameter was not more than 4 kms.⁴

Apart from the Round City and up to the 1950's, Baghdad had no plan to be guided by. Also Baghdad had no detailed plans, nor laws to enforce any planning principles. Indeed it was growing haphazardly. It is almost equally true for this and the following periods, that no detailed and precise information could be gathered about many aspects of the city.

Thus inevitably one has to go back to visual and qualitative observation to trace the structural evolution of the city generated by the functional development.

In 1936 the government of Iraq had asked two German planners* to provide a master plan for the city of Baghdad.⁵ They suggested that the Tigris must be the main axial line for the city's future developments. They also considered al-Karkh, the part secured from flooding, as the main area in which major physical development should take place. Their plan attributed the still medieval look of the city to the flood factor. Thus they suggested a scheme to protect the city from flooding. They also suggested that the population of Baghdad should not exceed one million. Sewerage difficulties, the everlasting problem which led to the bad appearance of several parts of the city, was the main target of their plan.

They proposed a new third break-through street to be cut in al-Rusafah, between al-Kifah and al-Rashid streets which already existed. This was in fact constructed after 1957 to become the famous street of al-Jumhuriyah. As the city had no public bus service they put this as an imperative problem to be dealt with. It is easy to show fairly accurately the new sections which came into being in this period (Fig. 7.1). The main criteria are the regular streets and also the

* The names of these two planners are not mentioned in the report.

Fig. 7.3



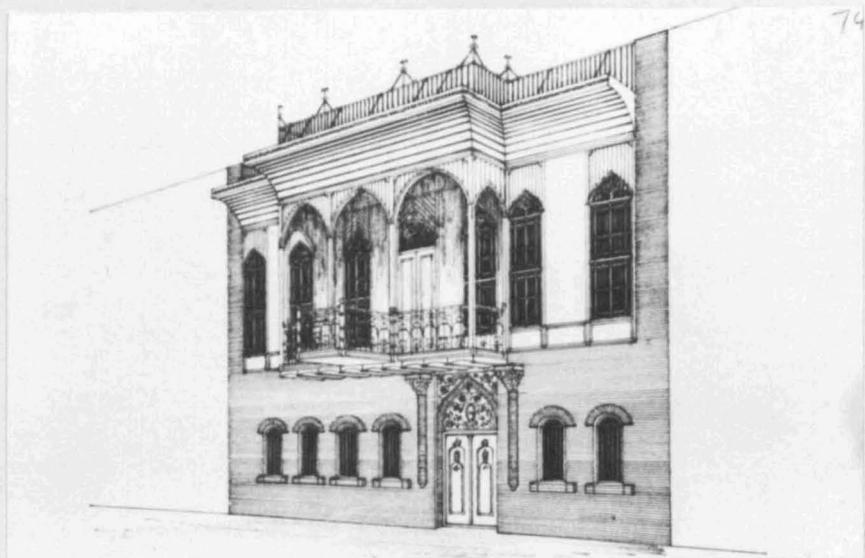
186. Baghdad from the Sarai



187. Baghdad from the air before the cutting of ~~Ghazi~~ ^{al-Kiflah} Street

Baghdad early in the 1930's (after Naval Intelligence Handbook)

Fig. 7.2



a. Elevation of modified courtyard house (1932) in Iwadiyah



b. A typical street with modified courtyard houses (1920 - 1936)

terraced courtyard houses lining them. These houses are characterised by their ground floors, relatively high windows, and brick-built windowed balconies. (Fig. 7.2) These make the old and new textures of Baghdad distinguishable at first glance. Consequently field investigation, showed Baghdad to have had two distinct morphological components at this period. Firstly there are the compact, large, traditional central part characterised by its confusion of *zuqas* and *agids* for pedestrian and animal traffic and flanked by Arab houses with carved doors and wooden 'shanashil' projections jettied so that sometimes they completely shut out the sky. Secondly there are the new suburbs layout on the edges of the Old Town. The main historical mosques, churches and public buildings are located in the first part. As in other Middle-Eastern areas the morphological contrast between old and new mahallahs, indicates the social and economic disparities between the needy masses and the wealthy few⁶ (Figs. 7.1, 7.3).

Although Baghdad had expanded longitudinally along the river, it still had some flexibility for urban development within the limits of its walls. Linear growth outside the south and north gates of medieval Baghdad occurred before the city was completely occupied as was the case in many Chinese towns.⁷

These spaces, however, were filled in piecemeal fashion in the following periods. The British army 40,000 troops and the administrative authorities stimulated the increase of population of the city, which accelerated the elongated physical growth. The British built their new embassy, still extant, in al-Karkh in a newly improved street not far from the then new bridge of al-Ahrar.

Within ten years after the occupation of the northern part of al-Battawiin and particularly al-Ilwiyah were developed as well-to-do

residential suburbs. They have the appearance of a western town with wider straight streets and a mixture of people. Religious seclusion slowly broke down, Christians beginning to live alongside Moslems a fact hardly observable in the preceding periods of traditional Baghdad.

When law and order improved, wealthy population of all denominations began to move from their very distinct traditional mahallahs in a mainly southward direction. For the first time the traditional groups integrated to a degree and this was expressed by a new pattern of development.

Interestingly the British Community had secluded themselves at Ilwiyah, the newly developed area, and al-Hinaidi further to the south. They were far from the Old Town. It is an English tradition to segregate themselves from the natives, resulting in some new quarters. The main morphological changes took place in Baghdad during this period both inside and outside the traditional parts, and accelerated in subsequent periods. They resulted in construction of some public buildings to house the new administrative and cultural functions, the creation of new wider roads along the lines of the former town walls on both sides of the city* the segmentation of the traditional town by the new break-through streets, and the augmentation of several new modern roads southwards towards Karradah al-Sharqiyah and northwards towards Adhamiyah on the Rusafah side.

Expansion also occurred southwards and northwards in al-Karkh to form new mahallahs. ⁱⁿ As/present-day Baghdad the new plan units in peripheral situation were rather homogeneous because of contemporaneity of streets, plots and buildings. All these developments prepared

* The introduction of arabanahs (horse-drawn carriages) necessitated that new streets be wider and straighter.

Baghdad for changes of the greatest magnitude in the coming periods with the greatest effects on the social structure, the economic base and the physical complexes of the city. The period under discussion could however, be considered a fore-runner in the acceleration of the processes of urbanization during the following periods.

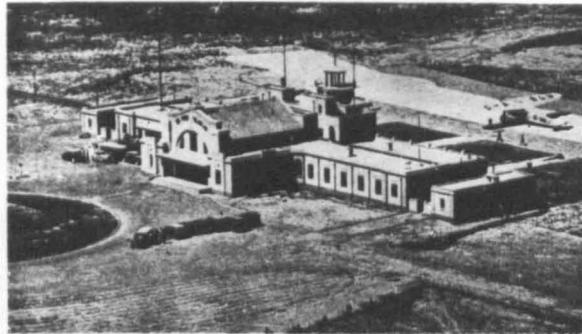
The new ideas and technology infiltrating the town in this period had led to some modification in the traditional housing style but without effecting any radical change. This was because of the cultural and social patterns typical of Arab countriss, and these had not yet been essentially changed.

Further development occurred to the north of traditional Baghdad where early in the 1930's al-Waziriyah estate was laid out and subdivided symmetrically, in broad avenues. In the following period it attracted the foremost Arab families, the Royal Palace (al-Bilat) the palaces of the majority of the ministers and many other influential individuals. It is interesting to know its status, this mahallah had acquired its name from Wazir (minister)* as most of them owned sizeable plots, frequently more than 1200 sq. m., to be built-up in the following period in a semi-western style⁸ (Fig. 7.1)

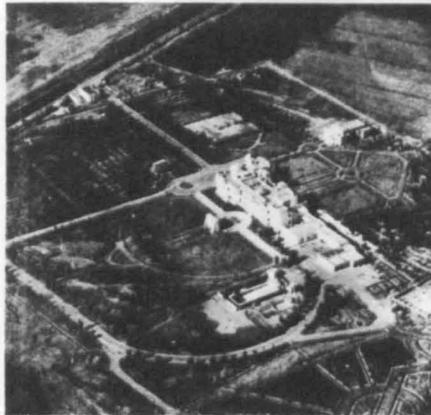
Internally and for almost two decades from 1917 to 1936, al-Rashid Street remained the only major through road in al-Rusafah, being the main business area and accordingly the architectural axis. Bab al-Sharji and Bab al-Mudham districts where the main roads enter and leave the town, had become the main centres for both public and private building activities. This continued in the following periods.

* Some believe that the locality was named after the Ottoman governor with the name of Wazir.

Fig. 7.4



134. Civil Airport at Baghdad



135. The King's Palace at Baghdad

- a. The old airport and the Royal Palace early in the 1930's
(after Naval Intelligence Handbook)



- b. A residential street in al-Battawin with modified courtyard houses

Transportation development

The importance of Baghdad as a major service and commercial centre has increased during this period owing to the development of transportation. Between 1920 and 1929, Baghdad was connected with Basrah, Bagubah and Kirkuk by railways. This has facilitated commercial connections between the north-east and southern Iraq via Baghdad.

Before 1920 only two main roads existed for vehicular traffic. The first started from Baghdad and crossed the desert westwards to Fallujah on the Euphrates. It then followed the river upstream through a picturesque valley, rich in historical remains. The second started from Baghdad towards Persia along the Diyala valley. A regular motor service between Baghdad and Damascus was initiated between 1923 and 1925⁹ and had an immediate effect on Baghdad's international situation. Rutbah, the mid-desert settlement on this route soon flourished and became a town. It should be remembered that, although cars and horse-drawn carriages were increasingly in use, the country was still using both caravans and takhtarwan* to connect Baghdad with different parts of the country as well as abroad. Also there was the Kajawa**. These conveyances used to ply the roads between Baghdad and the religious towns, Hillah and Bugubah.¹⁰

The Cairo-Baghdad air service was inaugurated in 1921 followed by a passenger service in 1929.¹¹ In 1933 a modern airport came into being on the periphery of Baghdad near the Baghdad-West railway station.¹² The creation of this airport was the most remarkable creation in the inter-war period and was followed by the establishment of the first meteorological service in 1936¹³ (Figs. 7.1, 7.4)

* A kind of small wooden chamber usually furnished and with handles projecting in front and at rear, to be carried by porters or animals from one place to another.

** A sort of palanquin, often strapped to the back of camels or mules.

As a direct result of these developments in transportation international influences on Baghdad have accelerated the life and growth of the city and enhanced its geographical situation. The city became a primary air junction for services of all nationalities.

River transport particularly between Baghdad and Basrah had maintained its relative importance in spite of the fact that the use of railway and road transport increased during this and the following periods. Quffahs (see Part II) and balams (small rowing boats) were the main means of river transport in the Baghdad area. Boats were used by passengers to cross the river from certain landings, in the commercial centre, a scene which is familiar even today.

Baghdad experienced a revolutionary development when the first telephone system was introduced in 1922. It was installed in al-Qishlah (Sarai) opposite to al-Sar ai Mosque and had three extensions all of which were in the commercial centre. These were situated in al-Sarai, Mirjan Mosque and al-Karkh.¹⁴ In spite of all these developments Baghdad broadly maintained its medieval form. Rusafah remained the main part and made up almost four-fifths of the city, as considerable residential and institutional development took place on this side.

Karkh had lost its mud brick walls, except in a few places. It was linked with its twin al-Rusafah across the river by two pontoon bridges. The old (north) bridge occupied the site of the single bridge of the late Abbasid, Mongol and Ottoman periods, the southern bridge being then newly erected by the British army. Both of the bridges were capable of taking one-way traffic only. Both sides had their own commercial centres of bazaars, coffee houses, khans, always, schools and mosques, which express their physical and to a certain extent, functional independence. Al-Karkh had been revolutionized by the

construction of Baghdad-West railway station and the customs office. They were as now approached by a 40 m wide tree-lined boulevard starting from the bridge-head of al-Ahrar.

The years 1934-1936 witnessed a very important event, the promulgation of the 1934 Road and Building Law. This law has influenced both the street and house development.

This law required that a house must be built inside a garden, and each house must be occupied by one family. No time limit has been fixed for the application of this law. Since then Baghdad has faced many problems in its development. To give a single example, the land speculation proceeded by the replacement of the orchards of Karkh, Rusafah, Adhamiyah and others by housing.

Population Growth and Residential Structure

As a result of the natural increase in population, and because of the migration to Baghdad, the population increased considerably in this period.

The influx of people from outside, especially of poorer classes, commenced in this period. Migration was of two types, from other Moslem countries and from inside the country. The former involved mainly pilgrims, the latter fallahin (peasant farmers). Migrants from the impoverished rural areas precipitated the uncontrolled growth of new and unhealthy accretions, the notorious reed and mud hut settlements, (sarifah and kukh) representing a problem which arose, though it did not gather great momentum, before the Second World War.

Railway shops and yards, the emergence of the national army, khans and bazaars, industrial and educational developments and transport improvement, all increased the attractiveness of Baghdad and other major towns. The contrast characteristic of a Third World situation was

provided by the miserable life of fallahin ruled inhumanly by their sheikhs absentee land lords. As will be seen further in this work, the 'push' factors in this type of migration were extremely strong. The 'pull' factors, however, were not so effective as Baghdad itself was not so different from the countryside in many respects. The migration trend accelerated during the next period, owing to the relative economic prosperity and the increase in employment opportunities. Some of the migrants in this period such as the Kurds from their mountainous area began to migrate in considerable numbers to the capital, grouping themselves in mahallahs close to the central bazaar area. This segregation took place because they, as at the present time, represented the lower proletariat of hammals (porters). Migration from the south on the other hand had concentrated mainly on the edges of the town. There are no reliable figures for the population of Baghdad and the country in this period, and no comprehensive census was undertaken. Partial population registrations were carried out by the government in 1927 and 1935. Enumerators sat in the street and asked passers-by questions about the number of people in their family. They gave only the total population of the country. The population of Baghdad was variously estimated from 130,000 to 250,000. In 1930, Sir Ernest Dawson estimated the population of Mesopotamia at 2,800,000. His method was to ask the Liwa (province) authorities as the Census Department was not in a position to give a reliable figure. He put the aggregate population of the principal towns as 344,000 (Baghdad 219,000, Mosul 79,000, Basrah 46,000). Dawson's estimation was very likely the best one prior to the 1947 census.¹⁵

In 1931, the population of the country was given as 2,850,000 with one city (Baghdad) of more than 250,000. In 1932 the population of Baghdad was put at 358,840.¹⁶ In 1935, the approximate population

of the country was estimated by the Directorate of Population of the Iraqi Government as 3,560,456, the population of Baghdad liwa was put at 499,410,¹⁷ and in 1936 at 750,800.¹⁸ According to Coke, the population of Baghdad early in the 1920's was 200,000 with 150,000 in Rusafah and 50,000 in Karkh, out of which 134,000 were Moslems, 50,000 Jews, and the other minorities were Christians, Latins, etc.¹⁹

In spite of the great discrepancy among these figures, one can conclude that both the population of the country and of the capital increased.

The growth of the population of Baghdad is expressed in the development of new residential suburbs on its outskirts. The new suburbs were more open than the old sections, with many spacious sites for the utilities and administration of a modern capital. The new housing development took place in al-Sinak, al-Battawin along the northern part of al-Sadun Street and Adhamiyah on the East Side; al-Duriyin, Salihiyah, Kadhmiyah on the West Side (Fig. 7.1). Reportedly the number of houses built in this period were 1,200 during the years 1926-30, and 3,879 during the years 1930-36.²⁰ The houses of al-Salihiyah were built by the railway administration for their employees. Few scattered detached houses had been developed towards the new bridge in al-Karkh. These houses were intermingled with rural mud houses.

Initially the growth consisted of houses erected by some of the aristocratic families. At first most of the people thought it foolhardy to build houses outside the old town for fear of robbers and gangs. Such fear obviously did not prevail, however. The new mahallahs developed mainly along the Tigris and al-Sadun Street.

In this period Ilwiyah remained almost exclusively occupied by the British, with a few villa houses surrounded by bungalow constructions.

The longitudinal direction of growth noticed in this and the following periods was considerably changed after 1956 in the fifth morphological phase when owing to the flood control and transport improvement the city experienced transverse expansion. Houses were orientated as far as possible towards the Tigris as markedly as the commercial units were towards the street and bazaar areas. Even Karradah al-Sharqiyah became practically a suburb of Baghdad along the River Tigris. The desert in the east was unfavourable for urban development, being more liable to floods. Iwadhiyah was in its incipient development, to be one of the most favoured localities in Baghdad in the following period. In 1935, Bait al-Ummah, the Shiah educational organisation, had established its headquarters on the site.²¹

Al-Karkh, an entirely Arab part of the Old Town has the freedom to expand laterally owing to its relative security against flood. This explains the fact that major building constructions in the 20th century took place on this side, where government-owned large tracts of land were available. Thus the airport, the main railway yards and sidings, and a few royal palaces were built here, followed by more buildings in the next period.

As already mentioned, the British Embassy in this period moved to its present site at al-Karkh. It has since then become an architectural focus (Fig. 7.1). It attracted some of the then influential families, who built their houses in a rather different style in the next period. Except for the suburbs of Adhamiyah, Kadhimiyah, Ilriyah, Karradah al-Sharqiyah and Hinaidi, Baghdad's immediate environs were completely undeveloped or used for agriculture.

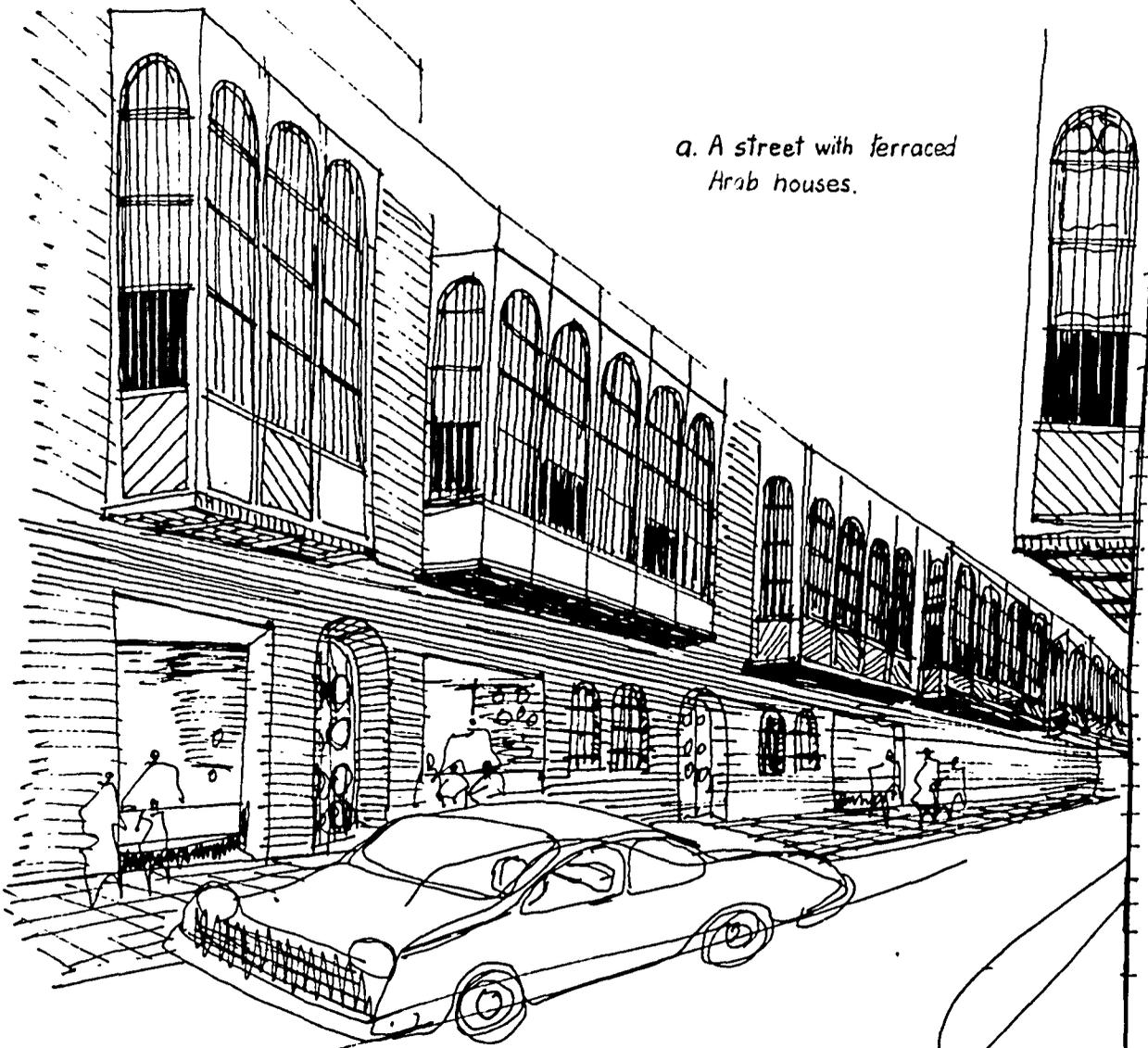
The new residential mahallahs had grown mainly at the expense of the great riverside and peripheral palm-grove belts. This is a sad phenomenon to be observed in Baghdad right through its modern development, which should be curtailed to prevent Baghdad from becoming a mere desert of bricks. The process is taking place at great speed in spite of the fact that many other towns, especially in Western Europe point to the undesirability of its consequences. Unfortunately palm-groves had been dangerously undervalued in the Baghdad area compared with the southern part of Mesopotamia where it is a productive tree.

In this period Baghdad had its own characteristic layout. Mosques, bazaars and administrative buildings occupied the central area, surrounded by the wealthy influential families, whereas the poorer classes were located anywhere in the city. However, a revolutionary change occurred in the pattern during this period, as a considerable section of the well-to-do community searched for new locations in which they developed new types of mahallahs. Consequently their former houses in the Old Town were either occupied by poorer classes or changed their function to warehouses, workshops, etc. This social levelling of traditional Baghdad has been almost completed in the fifth phase.

As a consequence of the bursting of its traditional limits, Baghdad had two types of mahallahs, varying as they are standing now, in appearance, in population and, relatively so, in function. Whereas the new mahallahs were completely residential, some of the central traditional mahallahs began to house commerce and other functions.

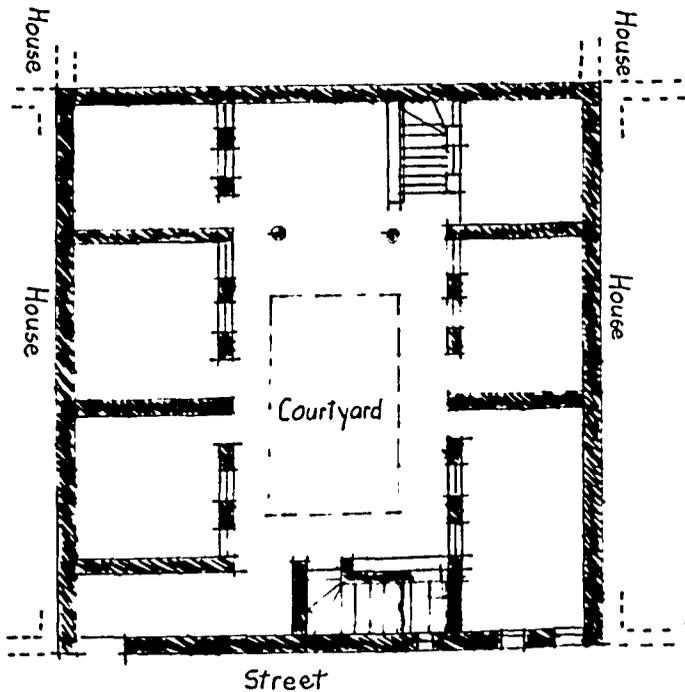
In 1931, Municipal Law No. 84, was enacted and dealt with the regulation of the relationship between the authorities and mahallahs.²²

Fig. 7.5 A Typical Residential Street, and Ground Plan of a Terraced Arab House During the Period 1920-1936



a. A street with terraced Arab houses.

b. Ground plan of Terraced Arab house



Baghdad continued as a city of many mahallahs, each one supervised as now by a Mukhtar appointed by Amanat al-Asimah from among the residents with their approval. The Mukhtar, while being in charge of the good order of his mahallah, also acted as a kind of official friend of his people, a recommendation from him for example was and in many cases is still necessary in getting a passport or recommendation for a job.²³

The new houses were built in rows and terraces and maintained almost all the principles of the traditional Arab type, with certain improvements to cope with the socio-economic progress of their owners. These houses were built on straight or 'grid-iron' streets without a central rectangular market place. The streets are catering not only for pedestrians and camels but for 'arabanah' and vehicles, which were few (Fig. 7.2, 7.4b, 7.5, 7.6).

Nearly all the houses built in this period were of two storeys, mostly inhabited by single upper or middle class families. Up to the end of this period and probably to the first half of the next period the traditional central mahallah maintained its pre-eminence over the other parts of the city, particularly as portrayed in the distribution of social classes. The elite had their luxurious dwellings intermingled with the poorer majority.

The density of number of rooms per plot in traditional Rusafah and Karkh was the highest in the city. Generally, each traditional house is less than 200 sq. m in area. The houses of the new mahallahs are much more convenient and spacious. The family unit in the new mahallahs occupied nearly twice the gross area formerly available. Consequently the central old mahallahs had the greatest degree of density, probably exceeding 1,000 per hectare.²⁴

Fig 7.6 Urban pattern of the old and new (south-eastern Rusafah).



The different street system in the new mahallahs and the Old Town is immediately apparent (Fig. 7.6). This can be observed in the four main segments of Baghdad at that time: Rusafah, Karkh, Adhamiyah and Kadhimiyah. The scene of blind alleys (agids), the almost covered zuqaqs, and their twisting pattern, all disappear in the new sections.

In spite of the physical development both in the centre (modification and replacement) and in the periphery (expansion), and the slow social levelling, Baghdad remained a city of distinctive social groupings, based on religious, tribal, regional or occupational considerations. Though Jews and Christians (Yahud and Nassara) remained primarily in their traditional mahallahs, a considerable number of them began to congregate in the gradually developing Sinak and Battawiin Mahallahs south of the old Rusafah. However, some wealthy Arab families had joined them in these Mahallahs. The life here was more pleasant and perhaps more quiet.

Christians had been increased in number by Armenian refugees who flocked to Mesopotamia, especially to the northern parts of the country and the capital just after the first world war. The Armenian refugees were housed in the 1920's in Camp al-Arman to the east and north-east of Adhamiyah, to be known later as Raghilah Khatun. They however moved in the following period either to the central mahallahs or to the Armenian mahallah at the south-eastern corner of old Baghdad near the Sheikh Omar business street, being replaced mainly by middle-class Arab Sunnah families. Adhamiyah, the northern community, mushroomed in this period. The built-up area had sprawled over wide tracts, and consisted exclusively of modified Arab houses, both around Abu-Hanifah Shrine and towards al-Sulaikh. Exclusively these new houses were built and occupied by aristocratic and middle-class Arab Sunnahs.

Kadhimiyyah, and to a certain extent Karradah al-Sharqiyah attracted Shiahs, both Arabs and non-Arabs, who constructed their houses not far from al-Kadhim Shrine. Traditional Sunnah and Shiah mahallahs remained preferably occupied by the same sects. The concentration of the Arabs in the north and south parts of traditional Baghdad thus had been changed, as Arabs headed mainly northwards, while Christians moved southwards. It is interesting to notice that certain people who occupied particular jobs also grouped themselves in certain mahallahs, for example horse breeders in al-Karkh and dyers in al-Rusafah.

The Modified Traditional Arab House

There is a total lack of research concerning one of the most distinct plan elements in the morphological evolution of Baghdad. It is the modified traditional Arab house, almost the only style adopted in this period 1920 - 36. The recognition of building styles and their relation to historical periods is, as Solomon among others realised, a key to townscape analysis.²⁵ Without reference to the house, the most frequently recurring element in the townscape and an important diagnostic index in field study, tracing and analysing Baghdad's evolution would probably be impossible. Each of Baghdad's morphological phases has its own style of housing. Each representative house has its own type, appearance, construction material, climatic, economic and social adequacy, i.e. functional efficiency, and above all environmental harmony or disharmony with the overall townscape. The Baghdadi houses in this and the previous period can be taken to express the "distinctive social organization of its inhabitants" as it came successfully to meet the material and spiritual requirements of the Arab family in its long standing social traditions. Accordingly, houses can be used as ^{an} index of the processes at work in forming a

particular townscape.²⁶

The increasing pace of socio-economic and technological change had influenced the form of almost all private and public buildings which emerged in this and the other periods. The new residential dwellings exclusively built by high and middle class families compared with the traditional houses of the core, where houses of wealthy families are intermixed with those of the poorer folk.

What one could probably describe as the modified traditional house is often of two storeys high with balconies. It is the second type of house to be found in Baghdad's townscape evolution. Like its predecessor it has a courtyard which remained the key element in the house plan. The number of these houses has been put at 5,100.²⁷ Houses of this period were built in serried formation characteristic of the streets and townscape of these new areas. The new streets, designed for horse drawn carriages and cars passing in opposite directions, are wider than the tunnel-like *zugaqs* of the previous period.

The bare brick walls characteristic of the previous phase were now supplemented by walls with larger and higher windows overlooking the street, serving as an indication of the wealth of the owner (Fig. 7.1, 7.2, 7.4b, 7.5, 7.6)

Family privacy was specially catered for in retaining the courtyard idea in these new Baghdadi houses. Though windows were put in ground-floor rooms, they were placed in higher positions so as to prevent anyone from violating the privacy of the interior by looking through their windows. These windows however, indicate the tendency of the Baghdadi house to open itself slowly to the outside world. Through these openings the house obtained the necessary light and ventilation, yet it principally looked inward towards the courtyard, the physical focus of

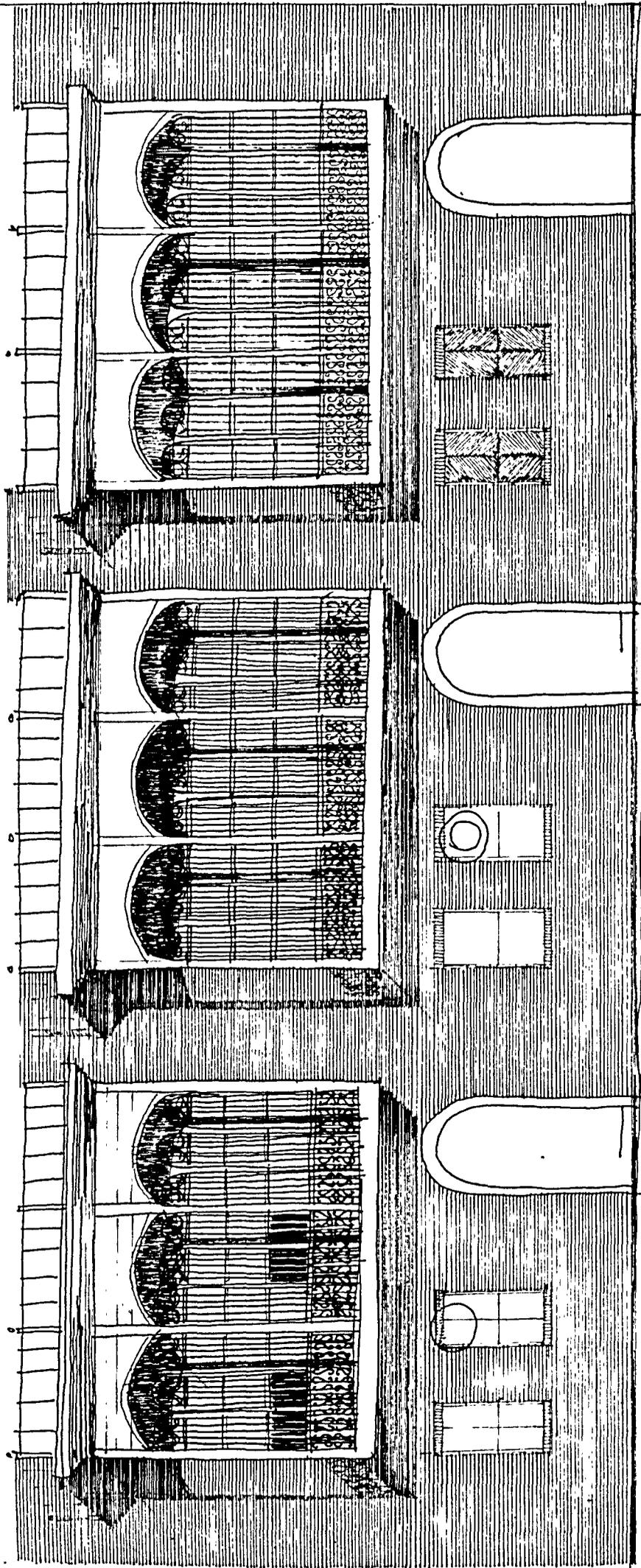


Fig. 7.7 Row of Modified Traditional Arab Houses, 1920-1936

the house and central social space for the family. Moreover, although the house became less separated from its street, it still remained entirely separated from its neighbours. Often windows are covered with fine wire mesh to exclude insets^C. This was to be very common also in the houses of the following periods. The arrangement offers appreciable resistance to convection currents, and generally such a window when open will not allow an adequate convection flow of night air into the building.

As can still be seen in some houses of present-day Baghdad, the modified houses adopted a rather primitive way of producing artificial humidity and coolness. A double reticle^L of palm leaves (which cost nothing in Mesopotamia) is formed and filled with a desert herb (called aqul or shock) which has the quality of holding water. This construction is continually watered and hung up in a special glass-enclosed aperture and has affected the appearance of the street front negatively.

Almost all houses developed verandahs (shurfahs). Here the verandah instead of the shanashil, though not to the same extent, appears to shield the lower walls and windows from direct sunlight, thus reducing the mean wall temperature and improving the efficiency of the windows. A verandah construction is therefore beneficial in climatic conditions like those of Baghdad (Fig. 7.5, 7.7).

Imported European influences made themselves felt in the shape and structure of windows and doors. In contrast to the previous period, house doors can now be found facing each other. This is understandable, as the new houses were occupied by wealthy and more progressive families who showed some tendency to follow the western way of life. Heavy knockers and handles of wrought iron are still to be found on these doors. However, as in the previous period, the front doors of the new houses are

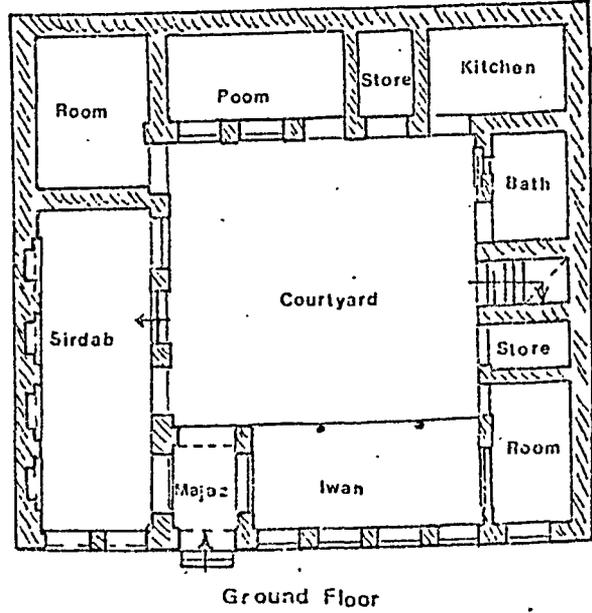
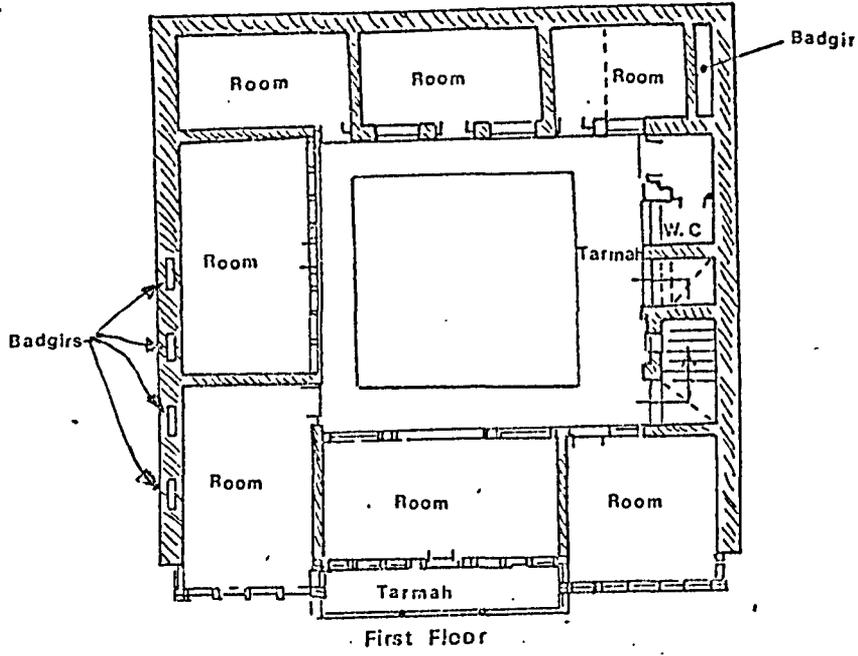
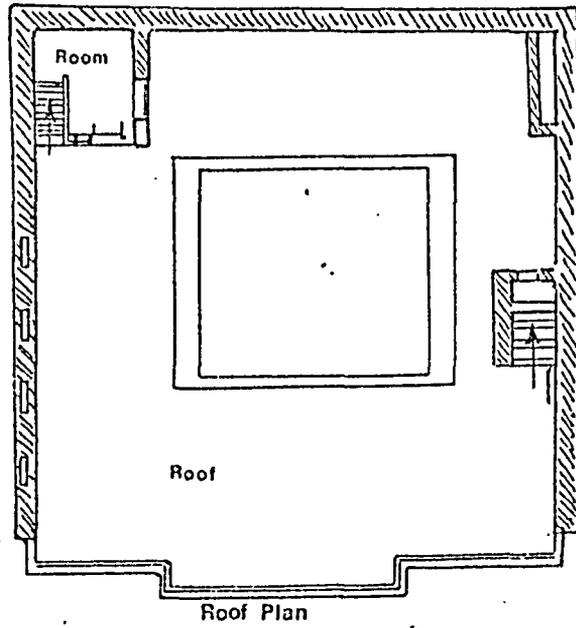
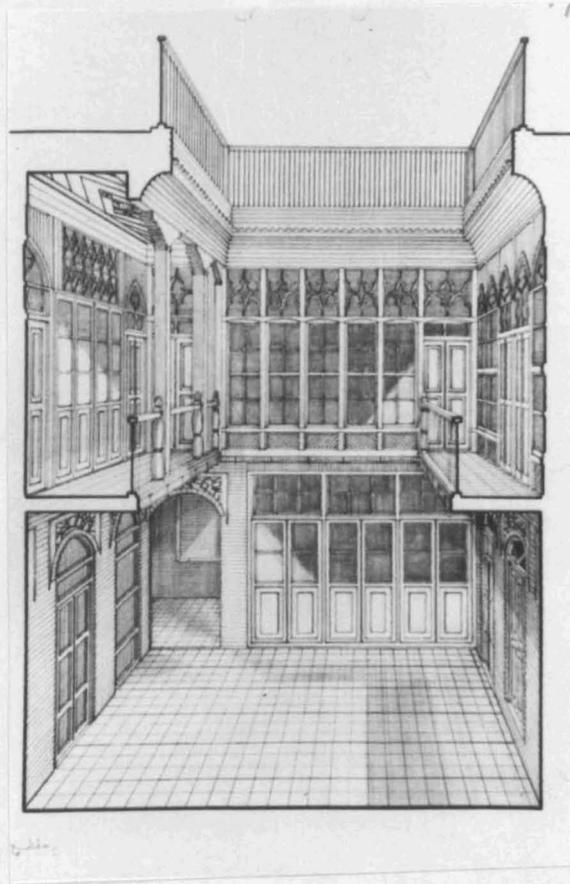


Fig. 7.8



a. Courtyard of modified courtyard house with dog-leg entrance and gallery



b. A typical zuqaq leading to the Tigris in Rusafah

never on the central axis of the house but always to one side.

The broken or 'dog-leg' entrance has been preserved in the overwhelming majority of the houses (Fig. 7.8a). It is still a social necessity in a conservative society. Passers-by could thus see only a blank wall. Thus family security and privacy have been maintained in these modified houses. The houses which abandoned the 'dog-leg' entrance were owned either by Christians or wealthy Arabs. Still, a curtain was used in the straight entrances, as even these semi-westernized families were respecting accustomed social principles. Sometimes a wooden screen was adopted instead of the curtain, which can be seen in a considerable number of houses in Baghdad today, especially those built before 1936.

Bricks and tiles were the main material for paving the entrance, used in a similar fashion to that of the courtyard and terraces. The industry producing this material began to grow steadily. Tile works, like most of the existing ones, were small, with rudimentary installations.

The fact that the courtyard has been preserved says a great deal about both the function and the structure of the houses, as well as the climatic and traditional reasons for its continuation. Gardens had not been introduced. The courtyard as the basic element, takes up a considerable part of the plot and might contain a fountain, a pool or a small garden. Palm trees in such courtyards indicate that they are of a much older age than the houses themselves. The houses of this and most of the following periods had in fact been built in pre-existing palmgroves.

The courtyard was inter-connected with the rooms by the portico (liwan) or gallery (tarmah) (Fig. 7.9). The liwan is used for siesta

sleeping which was made cooler by the newly introduced electric fans. It is covered with a mat in summer and a carpet over the mat in winter. All rooms of the ground floor look out on to the courtyard. One of the rooms is reserved exclusively for use by women, while in some wealthy houses there is a particular room, generally elevated about two metres above the ground floor, having an open front, with two or more arches and a low railing. This is used for the needs of the family and the guests on certain occasions.

The courtyard and liwan during the summer are frequently sprinkled with water, which renders the surrounding apartments agreeably cool, or at least those on the ground floor. The reception room (guest room) is an important element in the design of the modified house. Usually it is located either on one side of the entrance or on the most accessible side of the courtyard. It faces the street, having sizeable windows and being almost always over the sirdab.

Sirdab is provided with badgir which is still used, but not in all of these houses. Some of these dwellings have abandoned such elements, as a result of the increasing use of electric fans, the improvement in the orientation of ground-floor windows, and because of the rooms becoming more spacious.

The balcony of the first floor is cantilevered upon iron girders, the wooden columns of traditional houses being abandoned in many of these houses. The gallery extended round the courtyard. It is the only means of communication between different parts of the rooms on the first floor (Fig. 7.8, 7.9).

The kitchen, bathroom (hammam) and toilet are approached from the courtyard, occupying one section of the ground floor. Some houses have another toilet on the first floor.

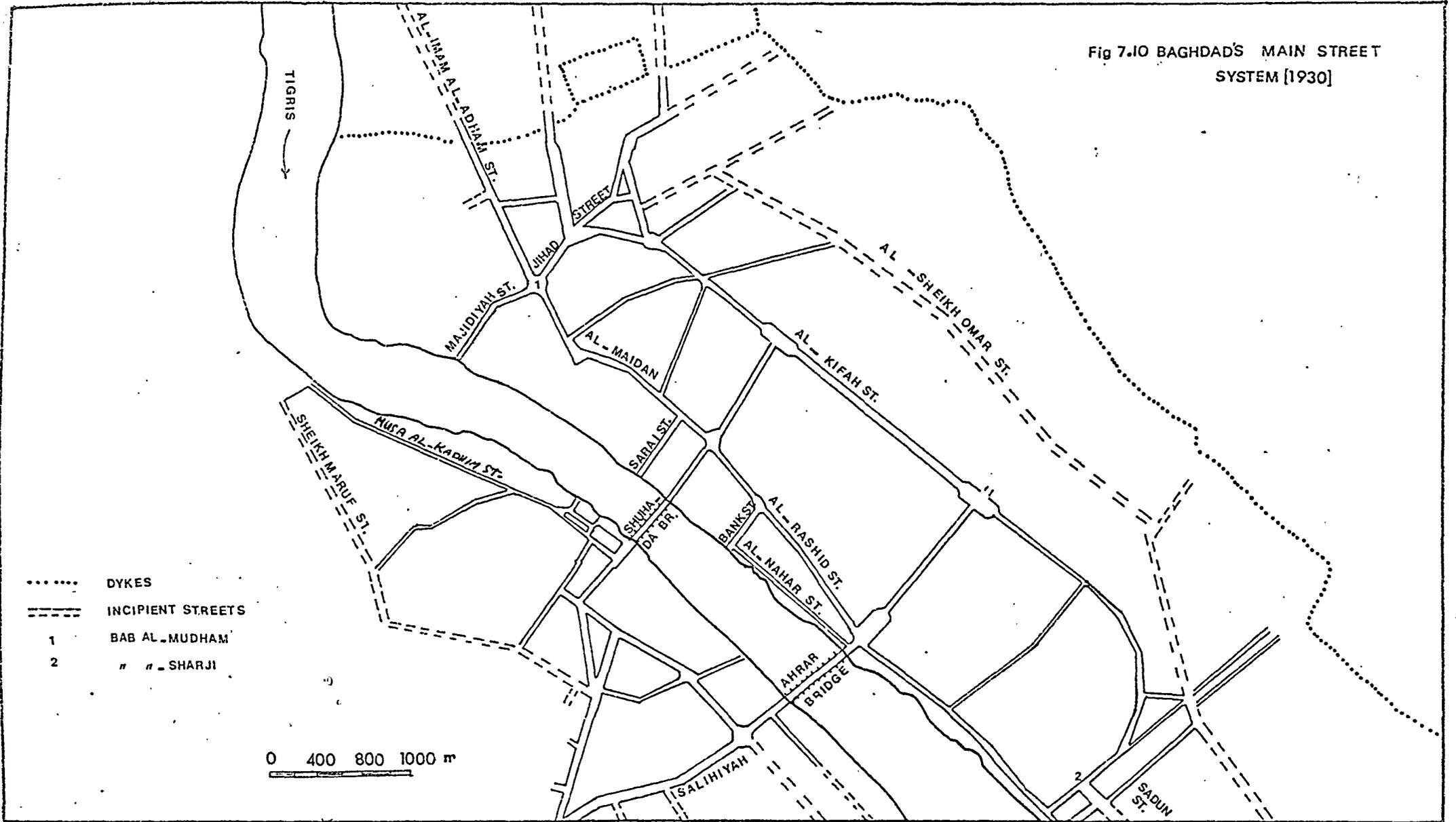
Stairs leading to the only upper storey are constructed of iron girders, and bricks. The upper floor rooms are used principally in the winter. Generally, they are larger than those of the groundfloor, and there is often a portico or overhanging gallery. The rooms like those at ground level look inward onto the courtyard (Fig. 7.9).

The average height of the first-floor rooms continued to be about four metres in order to reduce the internal temperature of the rooms. Although Baghdad grew beyond its medieval walls, it still retains an almost monolithic structure of uniform height throughout.

As in the case of the traditional house, the rooms of the modified Baghdadi house are not strictly differentiated. Rooms are used for purposes that differ according to time and occasional needs. The practice of roofing in this period has also been modified to become a combination of steel joists and brick-vault construction. A flat brick arch springs between two steel roofing joists. This is much better than the roofing process of the traditional house, which is one layer of earth and two layers of mud and straw, liable to leak. A layer of tar, very inexpensive material in Iraq, between the two layers of mud and straw was introduced. Moreover the discharge of rain water into the courtyard brought with it the nuisance of mud, which in the last period was avoided by surfacing the roofs of the house with bricks and sometimes tile paving.

Timber began gradually to disappear as a direct result of economic development and technological advancement in the building industry as well as the fact that except for the north Mesopotamia is lacking in structural timber. Thus steel began increasingly to be imported. Accordingly "I" steel girders began to replace the timber joists so common in the previous period. The steel beams are placed at about

Fig 7.10 BAGHDAD'S MAIN STREET SYSTEM [1930]



90 cm intervals and the gap between them is taken up by very shallow tunnel vaults built of brick and quickly hardening alabaster mortar (juss). It is an economical way unsurpassed even by the concrete method occasionally practised in the following periods. Juss* (alabaster), a white fine grained material, when mixed with water forms a jelly mixture with strong cementing properties. It was and still is used as wall mortar above the ground-floor level, as a plaster for the inside faces of walls and roofs, and sometimes, where juss is very hard, as a floor finishing.

The roofs are used by Baghdadis for sleeping purposes in the long summer. Their formation is interesting, with many elements of purely local character in careful response to climatic conditions.

Thus the basic building materials of this period were: bricks, juss, wood, iron and tiles.

As Baghdad had no organized sewerage system each house was provided with septic pits. They cause great inconvenience to the inhabitants, particularly when they are being manually emptied into tanker lorries.

Electricity and water were provided to almost all houses in this period. Heating is needed only in the rather short winter (November - January) and the paraffin heater began to replace the open coal fire, familiar in the houses of the previous period.

The Street System (Figs. 7.1, 7.10)

The road network within Baghdad mirrored its growth pattern. An obvious phenomenon is that there is a contrast between the overall pattern of Baghdad in the previous period with its tortuous zuqaqs and agids, and the straight, wider vehicular road pattern of the new accretion of the town.

* The Arabic term 'juss' is used in order to differentiate the product in circulation in Mesopotamian markets from the variations of gypsum known in other countries.

The course of the Tigris has orientated the main axes of Baghdad's growth. Originally growth proceeded parallel to the river, with narrow alleys leading to the latter. Occupants benefited from these *zuqaqs* as they could draw water from the Tigris. In practice all the domestic life of Baghdad was centred on the Tigris. The linear pattern of growth can be observed on both sides and right through the period 1920-56. The river attracted most of the new development of the city, thus Baghdad was constricted as near to the river as possible. With the danger of floods nobody dared to erect buildings far away from the river, i.e. beyond the protective dykes. Not until after the construction of the earth dams were sizeable areas secured against floods. Consequently Baghdad could only grow in linear fashion (see Part II).

Al-Rashid Street, al-Kifah Street (built by the end of this period in 1936 and al-Nahr Street run parallel to the Tigris in al-Rusafah (Figs. 7.1, 7.10). The extensions of al-Rashid Street at its southern and northern ends follow suit and run also parallel to the river. This pattern is repeated in al-Karkh where the streets follow the loops of the Tigris wherever these exist. The tissue-like Old Town of Baghdad, dominated by the *zuqaqs* system, developed a well defined straight and intersecting street system for the first time in this period. Unlike the previous period streets built in the new mahallahs are not shaded from the direct sunlight. This was because these streets together with improvements of some of the old streets were designed to permit vehicular traffic into the built-up area. Horse-drawn carriages were originally widely used to fulfil the function of present-day taxis. They were four-wheeled carriages drawn by two horses, being the chief means of both inter- and intra-city transport. Externally, Baghdad was connected during this period with Tehran and Damascus by carriage lines. On

Fig. 7.11



- a. Al-Rashid street in the mid-1930's looking south. Horse-drawn carriages (arabanahs) were an important means of transport



- b. The public library of al-Awqaf in Bab al-Mudham built in 1934 looking north-east (destroyed in 1958)

Fig. 7.12



a. Al-Maidan in 1920 looking south-east towards al-Haiderkhanah Mosque



b. Al-Maidan at present also looking south-east

and coffee-houses emerged along this street.³⁰ European business firms were the first to be attracted by it. For a considerable way the street was flanked by highly decorated houses, usually of two storeys, with their own well designed balconies. However, the architecture of al-Rashid Street is now declining and its buildings^s are requiring maintenance urgently. Its colonnaded pavements protect pedestrians from the intensive sunshine of the long Baghdadi summer and from rain in winter. Most of the buildings along this and the other main streets had been remodelled on the ground floor to accommodate commercial and business functions. The upper floors, however, remained primarily in residential use. Many street traders were selling a variety of items along the pavements. To a certain extent the arcaded sidewalks offer the same advantages as the bazaars, for both pedestrian and commercial activities.

The earliest recreational land uses emerged in al-Maidan, (Fig. 7.12 a,b), as a few cabarets, coffee-houses and a public garden have been developed here. This square was one of the chief squares in Baghdad used for various kinds of entertainment during ids (feasts).

Bab al-Madham, Bab al-Sharji and the bridges strategically controlled the traffic to and from the town. The main roads and new businesses developed close to them. The northern growth of the city had increased the significance of both, al-Maidan and Bab al-Mudham squares. Bab al-Mudham was the start of al-Majidiyah Street leading to the Royal Hospital and the Tigris, Nuri al-Said Street (now al-Jihad Street) followed the line of the wall in this northern part, running to the east, now linked with Sheikh Omar Street, and al-Imam al-Adham Street led to the still secluded township of Adhamiyah, some 5 km, north of Baghdad. The latter street began to be frequented by

vehicles, successfully competing with the donkey and horse transport so common in the previous period.

In 1927 Bab al-Mudham became an open thoroughfare. The last portion of the gate had been pulled down in 1925 for the purpose of widening al-Rashid Street.

At the southern end of al-Rashid Street lies Bab al-Sharji square, then still in the incipient stage of development with few streets branching off from it. Al-Sadun Street, running towards Karradah al-Sharqiyah and al-Hinaidi Barracks, was 40 m wide.³¹ Along it and especially for its first km mainly on the Tigris side modified houses and other new buildings have emerged. This street attracted the well-to-do families as well as foreign embassies.

All new buildings here were in the new modified Arab style. This street in effect influenced the whole functional pattern and accordingly the physical pattern of the city, a fact very well observed in the following period. Al-Sadun, Abu Nuwas and al-Imam al-Adham Streets can be considered as extensions of al-Rashid Street. Abu-Muwas Street, then 20 m wide, started from Bab al-Sharji. It runs along the Tigris flanked by orchards and palm groves. Some modified houses appeared in its southernmost part. It is now the thriving recreational promenade of the capital. The northern strip of the wall thus reinforcing the belt's ancient fixation line by its altogether characteristic functional and morphological adaptation to modern needs.

The two pontoon bridges across the river determined the lines of two new and important transverse streets. They were built in 1936,³² and became very attractive colonnaded thoroughfares in the following period. They connected Karkh with Rusafah and also linked the Tigris with al-Rashid Street, and this with the newly constructed street of

Fig. 7.13b Al-Bank street soon after its construction and the central bazaar area of Rusafah (after Lebon)

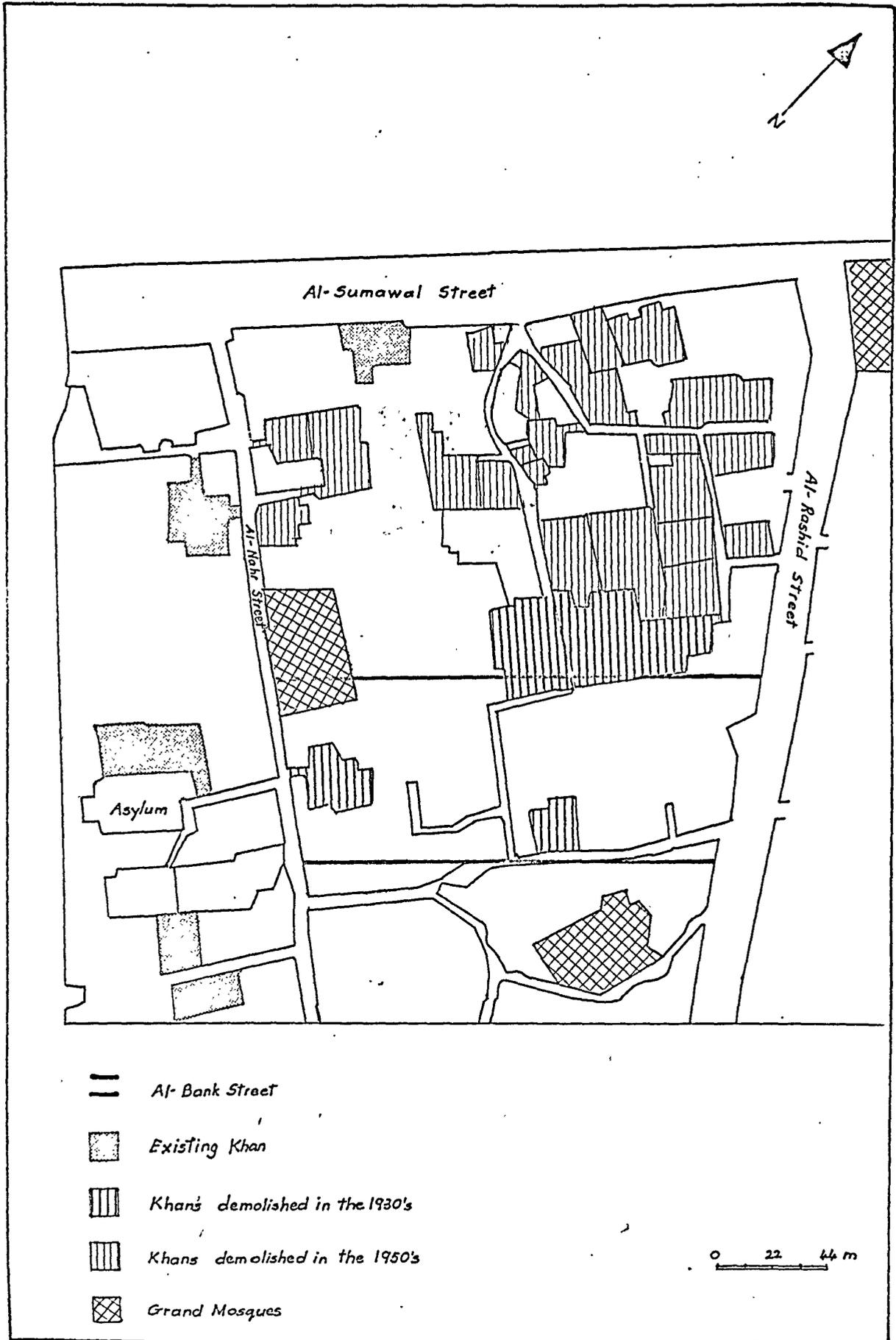


Photo 3.—The River Tigris and Karkh, from the roof of the National Bank, looking south-west.
The large white building on the far bank is the British Embassy.
In the foreground, parallel with the river, is Mustansir Street, which was the only thoroughfare for vehicles before 1914.
The vacant land in the foreground was cleared for redevelopment in 1953.



Photo 4.—The Main Bazaars and the Sarai, looking north from the National Bank.
To the left is the Mamun Bridge, and immediately, in front of its eastern end is the elongated courtyard of the Mustansiriya.

Fig. 7.13a Al-Bank Street in the 1930's



al-Kifah (then called Ghazi Street). These streets cut their way through compact traditional mahallahs.

Al-Sar'ai Street, now al-Mutanabi Street was developed between al-Rashid and the Courts. It traversed the core of Baghdad being now a main business street flanked by printing houses, book-binders and bookshops (Figs. 7.1, 7.10)

The modern Bank Street, lying between al-Rashid and al-Nahr Streets and parallel to al-Samawal Street, was cut early in the thirties of this century, swallowing up several metropolitan khans together with other beautiful houses. In the following period it became the financial hub of the city. Its present importance reaches beyond the national boundary of the country. It has revolutionised land values and functional pattern in this central strategic section, (Figs.7.1,7.10,7.13a,b). The number of pilgrims to the shrine of Sheikh al-Qailani increased following the improvement of transportation. Consequently the improvement of the zuqaqs leading to the shrine or alternatively the building of new streets was felt to be necessary. In 1932, a transverse street connecting al-Rashid Street with Baghdad East railway station via Bab al-Sheikh mahallah, originally built in 1910/11 was improved and extended. It facilitated the movement of pilgrims within the Old Town. During this period al-Nahr Street showed a tendency to specialize in women's commodities and the products of silver- and goldsmiths, a characteristic specialization continuing to the present time.

The year 1936 brought the second great change in the shape of the town, when chiefly for transportation purposes, the new break-through street of al-Kifah was cut through traditional Rusafah, running parallel to al-Rashid Street. It was completed in 1938³³ and runs in nearly semi-circular fashion between the north and the south gates. A con-

siderable number of traditional houses, over 700*, were absorbed by the new street which, however, forced its way through rather poorer mahallahs compared with al-Rashid Street. When the street was constructed the government did not appropriate the resulting vacant strips along its sides. Consequently, the street failed to develop its functional and architectural identity properly in such a short time. The area between al-Kifah and al-Rashid Streets became a rectangular residual island of traditional buildings to be cut by further streets in the following periods.

Like al-Rashid this street gradually developed buildings of 1 to 3 storeys with arcaded verandahs of simpler architectural design. However, it has to wait until the next period to be wholly lined with buildings. Also it has continued up to now to be associated with two functions, i.e. residential and business.

Further to the north-east Sheikh Omar Street began its incipient development attracting growth in this direction which mushroomed in the next period (Fig. 7.1, 7.10)

On the West Side al-Karkh continued as a traditional part with a high density of population. Musa al-Kadhim Street running towards al-Kadhimiyyah from al-Shuhada Bridge has seen the development of quite a few 2 and 3 storey arcaded buildings, especially near the bridgehead to the north of Hannan Mosque. The area between the bridgehead and the tramway terminal continued as a main business area on the West Side. From here the main roads of al-Karkh branched, heading towards Hillah, Syria and Kadhimiyyah. Suq-Hammadah Street, which is flanked by efficiently functioning awlachs, remained a chief business and traffic artery frequented by caravans. The boulevard running between the new bridge

* Computed by imposing the street on the plan of the city on scale 1:880, provided by Amanat al-Asimah in 1971. Though the authorities compensated the owners of the demolished houses they know nothing about their number.

and Baghdad West Railway Station and the customs office grew in importance. It attracted detached villas built by some of the well-to-do families in the following period and marked the southern limits of the built-up area.

Together the length of constructed and improved streets within and immediately around Baghdad has been put at 50 km, varying in width from 8 to 40 m.³⁴

The new street system of rectilinear thoroughfares in the new residential mahallahs and of improved old streets and superimposed break-through streets in the Old Town had improved communications within, and between different parts of, the city. Along such newly cut or improved streets amalgamation of contiguous plots associated with the replacement of traditional houses was either an established feature of importance as along al-Rashid Street or in its incipient stage on the case of others.

These transformative and augmentation processes were to continue and accelerate during the next two periods, primarily in the business centre. They increased the functional efficiency of the central area while tending at the same time to increasingly transform the former pattern of the city. A considerable number of the courtyard houses in the commercial centre, especially those between al-Nahr Street and al-Rashid Street, changed their functions from residence to business without great physical alteration. Also the street development which occurred in this period led to a great re-adjustment in the pattern of land values almost everywhere within the Old Town.

Land Use Structure

Functional mixture was in the past, as it is up to the present day, a distinctive feature of Baghdad. This has developed spontaneously and predictably the more so as the city evolved without proper planning legislation to enable the authorities to execute any overall plan. Up to the end of the 1960's, plans were considered virtually only for the purpose of providing new roads. Furthermore in the period under discussion and perhaps up to the 1960's, the idea of defining separate areas of heavy industry, light industry, commercial, residential and other functions, was never taken up in any Mesopotamian town.

However, relatively distinct morphological sections can be recognized in the city, depending on building types and their functions. It must be remembered that these morphological divisions are not as clear in Arab towns as they are in British towns for instance. In spite of this functional mixture, it is still possible to distinguish certain areas by their predominant functions, e.g. bazaar areas, cemeteries, orchards and residential mahallahs.

Morphologically, the administrative function of the city developed in scattered buildings in various parts of the town. Together with religious buildings they dominated the urban townscape of Baghdad. The city had several kinds of administrative buildings, concentrated mainly in the north-west of al-Rusafah and varying from the big Sarai complex to very small buildings. With few exceptions, the majority were of traditional style. The main entrances and windows face internal courtyards, which are covered only in rare cases such as the then now parliament building. The traditional administrative section comprised the newly enlarged ministries, the police headquarters, the post office headquarters, al-Baladiyah (the municipality) and the

Fig. 7.15

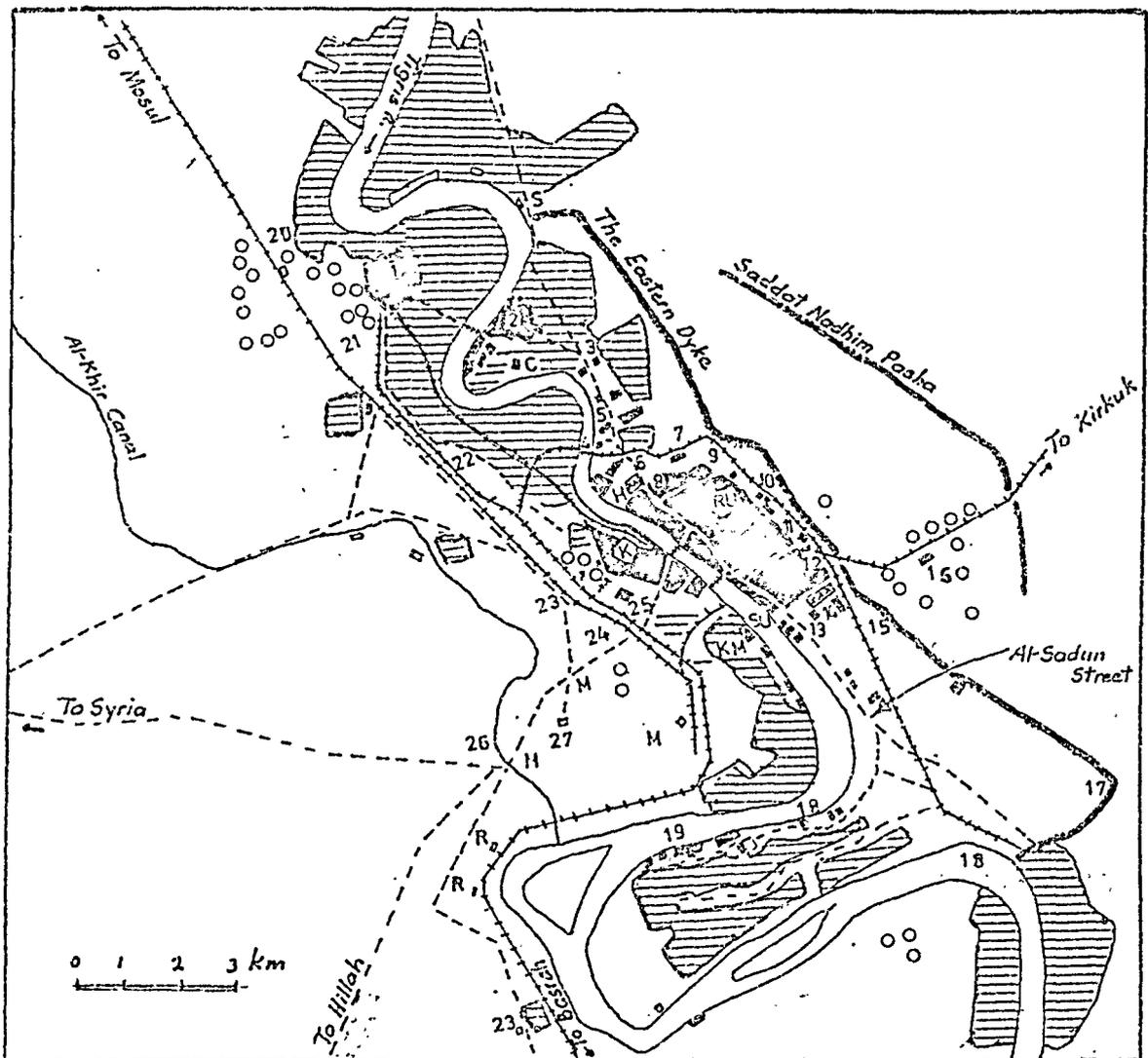


a. Al-Mamun street in the 1930's looking east. The second building on the left is the old Iraqi museum



b. Al-Fajr - a break-through street in Kadhimiyah

Fig. 7.14 General Map of Baghdad, 1936



-  Built-up area in 1936
-  Orchards and palm groves
-  Cemeteries
-  Kukhs
-  Koors (traditional brickworks)
-  Arterial Roads

- 1 Al-Kadhim Street
- 2 Abu-Hanifah Shrine
- 3 Textile Factory
- 4 Ferry
- 5 Al-Bilat (Royal Residence)
- 6 Al-Khaiyolah Barracks
- 7 Baghdad North Railway Station
- 8 Bab al-Mudhim
- 9 Sheikh Omar al-Sohrawardi Tomb
- 10 Slaughter House
- 11 Baghdad East Railway Station
- 12 Sheikh al-Ghazali Tomb
- 13, 14 Police and Military School
- 15 Racecourse
- 16 Military Hospital
- 17 Tell Muhammad
- 18 Military School

- 19 Karradah al-Sharajyah
- 20 Tannery
- 21 Railway Station
- 22 Al-Shalchiyah Railway Factory
- 23 Baghdad West Railway Station
- 24 Airport
- 25 Isolation Hospital
- 26 Police Station of al-Khir
- 27 Al-Washash Military School
- S Sulaikh
- H Al-Majidiyah Hospital
- SU Department of Surveys
- C Religious College
- KM Karradat Meriyam
- M Military Area
- R Royal Premises
- K Karkh
- RU Rusafah

main health institutions. With the independence of the country, more buildings and new sites were needed to meet newly created functions, especially as all health, educational and other public services provided by the Ottoman authorities had been so rudimentary.

Apart from the traditional administrative complex in al-Rusafah, many of the new governmental offices began to be scattered at random throughout the city influencing its overall spatial layout. (Figs. 7.1, 7.14) Some of these buildings were of modern architecture and have been developed either intramurally or extramurally in various parts of the city, mainly along the main roads. The administrative buildings emerging in the traditional governmental sector have helped to consolidate the associated section of the fringe-belt and at the same time have increased the significance of this sector functionally.

The bazaar area near al-Shuhada pontoon bridge had shown some administrative development. Al-Mustansiriyah, the Abbasid College, was converted to a customs office. The first Iraqi museum was built in 1924³⁵ on al-Mamun, the street improved by the British authorities. It still stands and is worth maintaining although its function has been changed once more (Fig. 7.14a).

The administrative complex began a slow southward shift following population migration in that direction. A few sub-offices followed the residential movement towards al-Battawin. This trend can also be observed in the following periods and was accompanied by hotels, cinemas, clubs and many other land uses.

The military side of administration was concentrated in al-Hinaiidi (now al-Rashid) Camp, located south of the city on the East Side, occupying 20 sq. km. The Baghdad-Basrah road traversed this area.

Nearly all economic activities took place in the traditional central

area between the two pontoon bridges both in Karkh and Rusafah, especially in the bazaars and around the central grand mosques. This traditional centralization was transgressed slightly by expansion along al-Rashid Street, and along the busy new street of al-Sadun, a tendency to be continued in the following periods.

Up to 1931, Iraq had no national currency. With the dissolution of the Ottoman Empire, the Turkish pound was replaced in Mesopotamia by Indian currency. Iraq remained a member of the Indian monetary area until 1931, when the Iraqi currency board was established to control and maintain the country's currency.

Commercial activities in Baghdad were stimulated by improvement of transport and the introduction of some banks, all of which were located in the commercial centre. At the time Baghdad had four private banks, all of them branches of foreign banks. These were: The Ottoman Bank, The British Bank of the Middle-East, the International Bank of Lebanon and the Shahinshah Bank.³⁶

Furthermore, the number of money changers (sarrafs) increased. They were almost exclusively Jewish, as Islam does not encourage such business. Sarrafs buy and sell different credits, lending money for a low rate of interest. They functioned in distinct sections of the bazaar, still surviving in proximity to the financial sector of Baghdad's present business centre.

Much of Baghdad's industry in this period was of the craft type though its range of activities was gradually increasing. Machinery was very little used and products were intended primarily for the home market. Manufacturing was small in scale and confined usually to the homes of craftsmen or small shops in the bazaar area. However, industries advanced albeit slowly in this period. New industries were developed on the periphery of the city, especially along the eastern

edge of al-Rusafah between the old wall and the residential mahallahs i.e. in the formerly moribund intramural of the fringe-belt, in broad analogy to belt development observed in Newcastle upon Tyne,³⁷ entered its 'expansion phase', to be followed by a 'consolidation phase' in the following period. Most of the new industrial developments here were iron foundries, automobile machine shops and tinsmithies, located along the ^uforth and less intramural through-road parallel to the river which came to be known as Sheikh Omar Street in the following period. In characteristic fringe-belt fashion this peripheral industrial concentration was reinforced by the construction of Baghdad East Railway Station in the Sheikh Omar area, and also by the availability of cheap vacant land (Figs. 7.1, 7.14).

In al-Karkh on the West Side the main new workshops were located as now in the central area, though Sheikh Maruf Street which marked the lines of the 19th century wall and so represented the fixation line of Baghdad's early fringe-belt on the south-west side of the Old Town, has attracted a considerable number of new firms. In this functional respect it is the equivalent of Sheikh Omar Street on the East Side though its morphological significance is far greater since Sheikh Omar Street never coincided with the ancient fixation line of its associated stretch of fringe belt.

During this period the city had two ginneries (one on the West Side) three woollen mills producing 90 per cent of the country's overall production of wool (one of them is the famous Fattah Pasha factory in al-Kadhimiyyah), ten small cigarette factories, three soap works, a tannery, and a glass mirror factory established in 1936. A few more mechanized brick works were also founded. After the first world war, many wealthy people began to invest their money in the building industry,

and the number of brick kilns reached 13 in 1939. Single-room ice and soda factories had multiplied, and a brewery was founded. In 1936 Bata, the shoe-producing firm was established as the oldest modern factory in the capital.³⁸

Although many of the industries mentioned were developed in peripheral areas, al-Abbakhanah (Fig. 7.1) the central modern industrial area continued as the main sector, containing printing works (Baghdad then had 27 printing presses and 19 newspapers), tobacco factories and the afore-mentioned electricity power station.

The government's major contribution to the development of industry in Baghdad and the whole country was the promulgation of an industrial law in 1929 permitting the importation of machinery without taxation.³⁹ Industrialization was further supported when the government established the Industrial Bank in the 1930's.

The Commercial Centre

In spite of the physical expansion of Baghdad during this period, in which some new business streets, such as al-Rashid had emerged, the traditional bazaar area maintained its absolute centrality and remained the major centre of economic Activities. It continued as a distinctive morphological area, housing the fundamental economic function of the town. The bazaars of Baghdad played and are still playing the role of the morphological as well as the functional link between the major economic, i.e. commercial and industrial, aspects. Their continued centrality within the traditional mahallahs can be explained no doubt by the position of the old pontoon bridge that has carried the main traffic between the twin settlements of Karkh and Rusafah probably since the 10th century, a fact evidenced by the high concentration of ancient historical buildings of different functions in this area. Thus the

dynamic relationships between function and morphology are well demonstrated in Baghdad in the past as well as during the modern era, particularly in the commercial centre. Administrative, commercial, religious and educational activities had all been concentrated in the area. Consequently some of the residential dwellings changed their function when their occupants began to move to new peripheral housing sites. The commercial centre became subject to new processes such as infilling, adaptation and replacement of buildings. Adaptation of building, took place mainly in various parts of the business centre, while replacement occurred in the very core of the area along al-Rashid Street. It is here that forms spring from and accord directly with current function though there was perhaps a time-lag in the relationship of the two. Form changes less rapidly than function so that traditional Arab courtyard houses for example became craftsmen's workshops or warehouses without immediate deterioration in their form or structure.

All these operations were taking place in the commercial centre while the outskirts of the city were experiencing the advent of new land uses and the change of old ones, primarily for housing and business.

Although adaptation of buildings occurred in the commercial centre, almost all the buildings in the centre as well as the rest of the city remained of one or two storeys, and in spite of Baghdad's growing commercial importance many of its bazaars structures were neglected and in disrepair.

Traditional parts of Baghdad succeeded in preventing some administrative buildings, such as government offices or schools, but they failed to impede the development of banking institutions which replaced many traditional houses. Certainly such developments were not accidental when they appeared in the commercial centre. The banking activities

were monopolized by Jews, Britons and Italians. Islamic religious traditions and laws discourage the lending of money for interest but some merchants have been able to contravene these injunctions by sharp practice. It is perhaps for this and other reasons that Jews dominated al-Sirafah (money lending and changing). Sarrafs issue money to their customers, if necessary, without a cheque or written order of any kind. "Sometimes large sums were dispatched in this way to distant khans, through the medium of a servant or underling, and this trust is but rarely abused."⁴⁰ This habit is still widely in use in Baghdad's bazaars. As already mentioned, the new Iraqi currency was circulated after 1931, facilitating commercial activity, employing the Iraqi Dinar divided into a thousand fils. This was supported by the establishment of the city's Chamber of Commerce which played its part in fostering of commercial prosperity of the town, particularly in the following periods.*

With the growing significance of commerce in Baghdad, some big traditional houses were converted into khans. As they stand now, many khans have developed behind the frontage of the bazaars, often having their entrances in the bazaar street. Baghdad is said to have had 50 khans in this period.⁴² They are successfully integrated, both functionally and physically, with the bazaar system. This intimate relationship is one of the salient morphological characteristics of Baghdad and all large Arab towns. In both parts of the Old Town the main khans and always maintained the location they had in the previous period. As at present the bazaar area of Baghdad like that of

* According to the Chamber's magazine, the first law establishing the Baghdad's Chamber of Commerce was put into action in 1880, and the chamber occupied a traditional house near the Governorate of Baghdad (al-Mustasariffiyah).⁴¹

other Middle Eastern towns, has many interconnected covered streets and each of these can be considered as a morphological element in the townscape of the city being specialized in certain kinds of goods. The bazaars traditionally have a wide variety of functions combining many kinds of production, wholesaling and retailing.⁴³ At the same time they are segregated in functional sections, which has many advantages for both buyers and sellers. This functional segregation or localization had developed for various reasons. Probably the society's technological status was an important factor in such spatial specialization. This could be seen in Baghdad as it had primitive transport and communication media, which necessitated a high degree of concentration within the area to ease commercial operations. In this way craftsmen, dallals (middlemen), sarrafs (money lenders) retailers and customers alike can more readily interact.

Bazaar specialization in Baghdad continued in this period. Producers (craftsmen) or retailers of the same kind of goods occupied adjacent stalls and each trade had one distinct bazaar section to itself. The order in which traders follow one another in the layout of the bazaar is clearly visible throughout Baghdad's history and in all its modern morphological phases.

Bargaining was, as it is now, in universal use. In this period and up to the present day, Baghdad's bazaars are the world of men. There were no female shop assistants.

As a trader the Arab was and in many cases still is not afraid of enterprise, and will cheerfully risk large sums of speculations which would give a European man several sleepless nights.

The greater bazaars of Baghdad at that time were almost monopolized by Jews, while the small bazaars were occupied by Arabs. Christians on

the other hand confined their attention mainly to enterprises such as hotels, cinemas which began to grow in number, and shops catering for Europeans.⁴⁴ Much of the wholesale business at its selling end was done in the bazaars by strolling dallals who made a speciality of being 'au fait' with the changes in the markets and to some extent performed the functions allotted in western countries to business newspapers and trade reports.

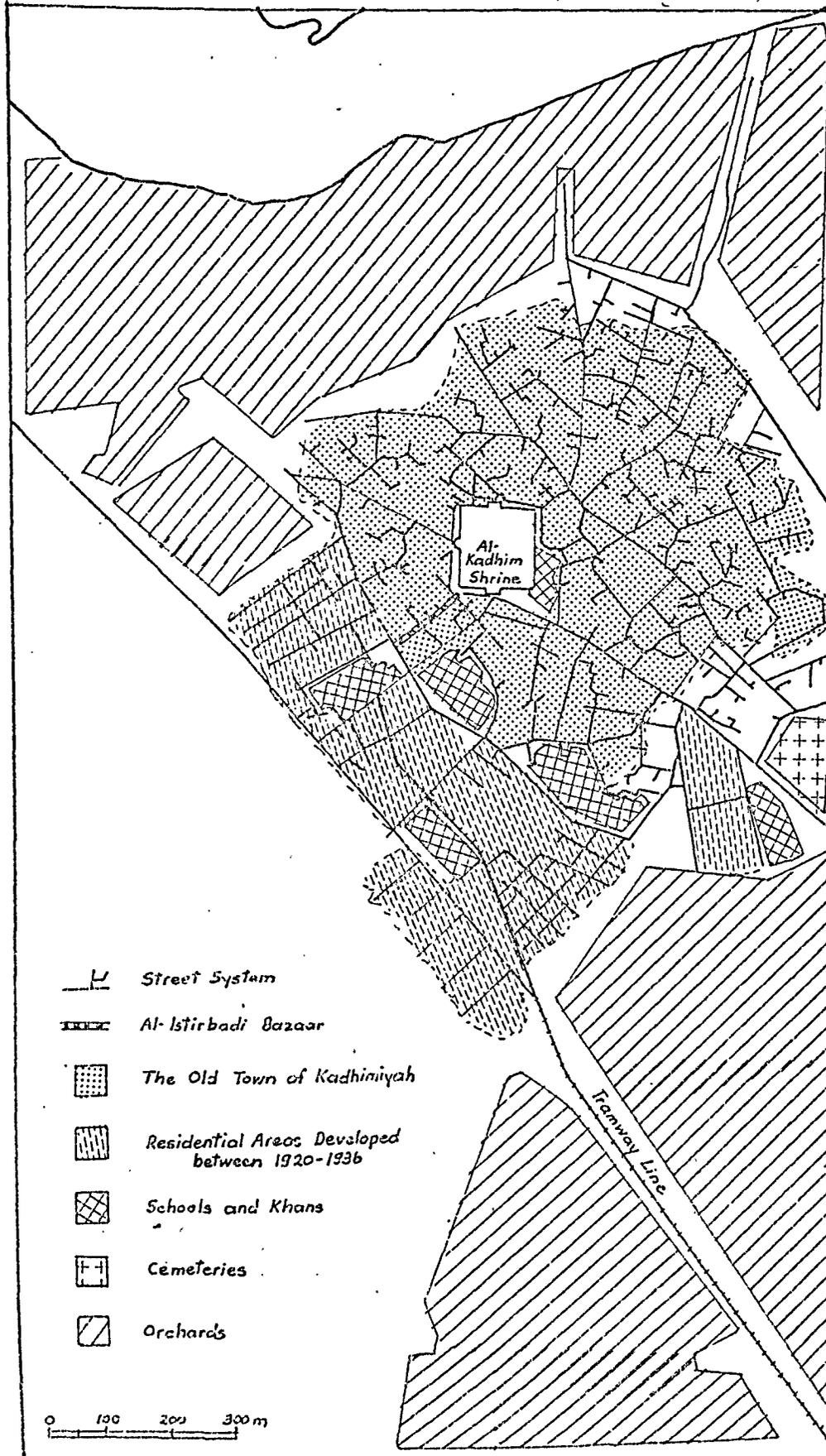
As now bazaars were usually deserted at night except for guards on patrol. Most of the major bazaars had gates, which prior to 1917 were locked at sunset like those of the town. In the bazaar area, gahwahs are dispersed but carefully located, and are favourite places where business meetings and commercial transactions are carried out. As the city expanded, adequate shops, including some European shops, developed. Also scores of agencies for businessmen concentrating their establishments primarily on al-Nahr Street, to be attracted later to al-Rashid Street. This is typified by Stephen Lynch and Co., whose building is still surviving.

In contrast to the traditional bazaars nearby al-Nahr Street and the developing street of al-Rashid were the centres for imported goods.

Religious Position and its Morphological Influences (Figs. 7.1, 7.14)

The religious requirements of the city were reflected above all in the many mosques, religious schools and shrines associated with Islam. They indicate the distribution of bazaars and street vendors, a fact noticeable even today and played an important part in the locational pattern of the inhabitants. Thus Kadhimiya and Adhamiya grew up around the shrines of al-Kadhim, the Shiah Imam, and Aba-Hanifah, the Sunnah Imam, respectively.

Fig. 7.16 Kadhimiyah Townscape (1936)



In particular the community life of Baghdad centred around the mosques. Regular attendance at the house of God (Bait Allah) tends to make the mosque the focus of all business and social life. This was expressed by the fact that the chief bazaars, gahwahs, and hammams are round these sacred edifices. The mahallahs of Kadhimiyah, Adhamiyah, Bab al-Sheikh, Fadhl, etc., all have grown around Friday mosques (Fig. 7.16). It is also because of al-Sheikh Abdul Qadir's mosque that al-Rusafah expanded eastwards.

In this period, as well as in the following periods, al-Awqaf Department, the Sunni Moslem foundation for religious endowment and investment became the largest single landowner in Baghdad. The places of worship are administered by this institution. This was decreed by Law No. 24 issued in 1930.⁴⁵ Since then, Baghdad's townscape has been increasingly influenced by the works of this department. It began to invest some of its capital in residential, religious and commercial buildings. The shrines of al-Kadhim, Abu-Hanifah, and al-Qailani, were the most splendid religious buildings playing the role of distinctive functional and above all morphological foci in the city. The mosque of al-Kadhim came to be hemmed in on all sides by squalid bazaars and khans built on the site of the original graveyard surrounding the shrine. In this period both al-Kadhimiyah and its twin religious settlement of al-Adhamiyah were morphologically affected by the placing of pontoon bridge there in 1926/
27.⁴⁶

Apart from the tramway road (see Chapter 6), al-Istrbadi Bazaar, and a new break-through Street of al-Fajir, al-Kadhimiyah continued as a settlement with almost no streets (Figs. 7.15b, 7.16). However, the main zuqags and suqs were orientated on al-Kadhim Shrine. The mahallahs of

of al-Kadhimiyyah consisted mainly of traditional Arab courtyard- or modified courtyard-houses. The latter were built peripherally by some wealthy people, but physical expansion here was far less than that of Baghdad (Fig. 7.1) Both al-Kadhimiyyah and al-Adhamiyah remained morphologically detached from Baghdad^{but} were integrated functionally with it owing to the introduction of modern means of transport such as the tramway, horse-drawn carriages and vehicles, facilitating commuting. This is reflected in the fact that a considerable number of shops and businesses in Baghdad's commercial centre are run by citizens of al-Kadhimiyyah.

Both settlements were surrounded by orchards and palmgroves, which also covered a considerable part between them and Baghdad. Al-Karantinah Barracks was the only construction between Adhamiyah and Baghdad.⁴⁷

In contrast to al-Kadhim's sanctuary, Abu-Hanifah Shrine is characterized by its architectural simplicity. Like Baghdad and Kadhimiyyah, Adhamiyah acquired some modified traditional houses in this period. Physical growth is attributable to the economic development of Baghdad as a whole and to the improvement of the road of al-Imam al-Adham, connecting Baghdad and Adhamiyah and having a width of 20m. Buses began to replace horses and donkeys along this road, causing small and discontinuous ribbon development. Adhamiyah in particular attracted the wealthy Arab sunnahs from old Baghdad, while Battawiin to the south has favoured by Christians and Jews as well as some wealthy Arabs. Right through its history Adhamiyah had no Jewish inhabitants. The latter were not allowed to settle within a certain radius from the shrine of Abu-Hanifah. During this period, Adhamiyah was revolutionized both in terms of functions and morphology^p. A new post office, five mosques the mausoleum of the royal family and a modern textile factory were introduced. They have been built mainly on the outskirts of the old

settlement in fringe-belt location.⁴⁸

By the end of this period in 1936, Baghdad had a total of 49 Jamis (Friday mosques) and 83 masjids (small mosques).⁴⁹ Moslem religious institutions operate in madrasah or schools of Moslem theology and Arabic language and in Quran schools or Mullahs. The mosques of Abu-Hanifah, al-Gailani and al-Kadhim for instance had their celebrated schools.

It is a distinctive feature that most of the new residential mahallahs in the southern parts of the city developed without mosques. A considerable number of these mahallahs were built by Christians, Jews, and Europeans, particularly in Sinak, Battawin, Sadun and Ilwiyah. Thus except for two Christian churches the skyline of the city in these parts was of a uniform flatness not dominated by minarets compared with the traditional sections of the city.

Health and Educational Developments (Figs. 7.1, 7.14)

Together with car transportation, improvements in educational and medical services took up a great amount of space. The city became aware of the inadequacy of its traditional area to accommodate the new demands placed upon it. Thus readjustment took place in both the expanding business centre and the slowly growing fringe-belt where most of the lands were owned by the state. Educational standards improved somewhat.

The Ministry of Education emerged in 1921 and was located in Khan Dallah, commercially very important and still functioning khan in the central bazaars. As a result the number of schools increased. In 1920/21, the country had 88 primary schools with 8,001 students, and 486 teachers. There were three secondary schools, with 110 students and 43 teachers. Increasingly Baghdadis began to send their sons to

school and in 1931/32 the number of schools, students and teachers increased by 371.6 per cent, 496.8 per cent and 292.6 per cent respectively, compared with 1921. Urban settlements were the seats of these schools, which were mainly attended by boys, as girls were discouraged from attending schools for social reasons.⁵⁰ In 1935, the number of schools reached 450, excluding nursery schools, 365 for boys and 19 for girls. Christians and Jews had their own schools. Private schools were developed, such as the still standing al-Tafaiudh School built in 1919. For the first time in modern history, Baghdad and Iraq had higher education, its institutions being accommodated either in old buildings or in new ones, usually in peripheral location. They caused the physical expansion of the city to spread in certain directions attracting people from all over the country. The pharmaceutical, educational, military, medical, agricultural and law colleges were established in 1922, 1923, 1924, 1927/28, 1929 and 1936 respectively. In 1936, the Institution of Fine Art was established.⁵¹ Several buildings, mainly in Bab al-Mudham and al-Sarrafiyah, were built and have initiated the infilling process between Adhamiyah and Rusafah which is still continuing.

In 1932 the public library of al-Awqaf, at that time the most modern and a rather fine edifice was built behind Bab al-Mudham. Unfortunately it was bulldozed after 1958, to enlarge Bab al-Mudham square (fig. 7.11b).

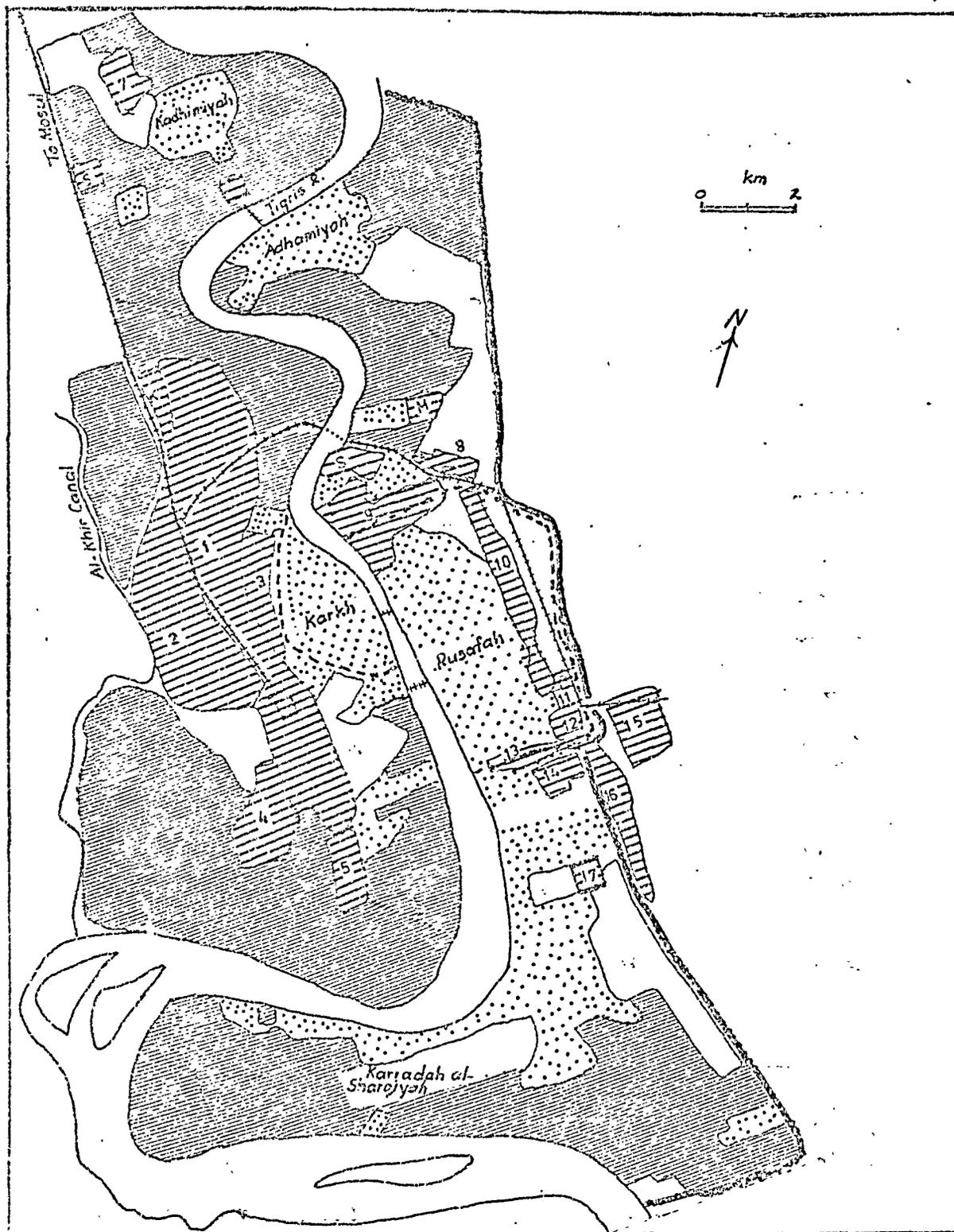
The majority of hospitals were located in the Bab al-Mudham area where the fringe-belt has since entered its consolidation phase. In the period 1920-1936 Baghdad had 300 doctors the main hospital was al-Majidiyah with 400 beds. In addition, Adhamiyah and Kadhiniyah hospitals had 50 beds each. In 1936 Baghdad Liwa had 17 dispensaries, seven of which were in Baghdad city.⁵²

During the previous period the Baladiyah or Municipality of Baghdad controlled only al-Rusafah and al-Karkh (Fig. 7.1). In this period the authority of Amanat al-Asimah extended its jurisdiction to cover the area between the eastern dyke in al-Rusafah and al-Khir canal, in al-Karkh on the West Side.

Although water supply had been improved during this period, the zuqaqs which come down to the river edge were frequented by women to fill their jars with water and by donkeys carrying water skins. (Fig. 7.8b) In 1931 and 1932 respectively al-Kadhimiyyah and al-Karradah al-Sharqiyah were supplied with purified water, and by 1936 the number of consumers had increased from 4,000 in 1924 to 16,000. The volume of water supplied grew to 4 - 5 million cubic feet. In 1936 distribution centres were : (1) in al-Sarrafiyyah which supplied water to al-Rusafah, (2) in al-Shalchiyyah 2 miles to the north of al-Karkh, supplying both Karkh and Kadhimiyyah, and (3) in al-Karradah al-Sharqiyah supplying water to al-Hinaidi Barracks and Ilwiyyah.

Fig. 7.11 Baghdad's Fringe Belt in 1936 (Partly based on information from Lebon)

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--- Wall Lines ~~-----~~ The Eastern Dyke -+ -+ -+ Railway

Residential Land Use
 Fringe Belt

M Military Land Use S Sarafiyah Waterworks K Karkh and Sarifah Settlement

- 1 Al-Shalchiyah Workshops and Baghdad West Railway Station 2 Airport
- 3 Sheikh Maruf Cemeteries 4 Al-Washash Barracks 5 Al-Shakriyah Sarifah
- 6 Kadhimiyah Industrial Area 7. Al-Kadhimiyah Sarifah Area 8. Baghdad North Railway Station
- 9 Bab al-Mudhim Administrative and Cultural Area 10 Sheikh Omar Workshop Area
- 11 Baghdad East Railway Station 12 Al-Ghazali Cemetery 13. Bab al-Sharji Workshop Area
- 14 Christian Cemeteries 15 Al-Aimah Sarifah Area 16 Brickworks 17 Al-Sadun Park

Orchards

Waste land



The Fringe-Belt of the City (Figs. 7.1, 7.1B)

During the period 1920 - 1936, the city commenced its physical expansion in almost all directions through continuous but slow outward growth, a mode of growth that was to be changed into a 'leap-frogging' one after 1956. Concurrent with this external or 'accretionary' growth the commercial centre, as already discussed, began to undergo a process of internal transformation by building demolition and replacement. Also in this period the surviving but ruinous stretches of the town walls of Baghdad on the East Side and West Side representing the primary fixation line for the developing fringe belt had attracted land use units seeking peripheral location along what are now Sheikh Omar and Sheikh Maruf Streets and their surroundings. Both of these streets attracted small handicraft firms and light industries, especially in the following period.

An interesting morphological feature of Baghdad's fringe belt is that the two streets played a similar functional role in attracting peripheral land uses, although they differ considerably in terms of morphogenesis.

The north-eastern, i.e. Shifekh Omar Street has not been placed on the ancient or primary fixation line of Rusafah's eleventh-century town wall but on the edge of the built-up area i.e. on the inner edge of the fringe-belt intramural. It came to be an important factor particularly in the next period in helping to fill up the ruined and vacant intramural land of Rusafah. Accordingly all developments lining this street were either of small industrial or scattered poor residential nature, housed in buildings of either modified Arab or western character.

In contrast to the case of Sheikh Omar Street, Sheikh Maruf Street has developed on the primary fixation line of Karkh's nineteenth-century town wall. Thus the main morphogenetic difference in the emergence of these two streets, is that, while Sheikh Omar Street has become a new major axis for intramural development away from the rather moribond fixation line of Rusafah's eleventh-century walls, Sheikh Maruf Street developed in orthodox fashion along its antecedent fixation line as a typical 'consequent' road. Therefore, the development along this street is of both intra- and extramural nature. Sheikh Maruf Street became the normal backbone separating the smaller and traditionally more closely textured intramural in terms of inherited plot features from the much larger, morphologically more open extramural. Owing to the locational difference between the two streets, and particularly the fact that Karkh is safer from floods, Sheikh Maruf Street has unique opportunities of attracting land uses of extramural nature.

Another interesting difference is that while Sheikh Omar Street came to be aligned parallel to both the Tigris and the break-through streets of Rusafah, Sheikh Maruf Street developed as a closed street starting from and finishing at the Tigris as its antecedent fixation line, i.e. the town wall had done.

Early in this period, the north-western and south-eastern walls of al-Rusafah disappeared under the pressure of further physical expansion inspired by functional development. The north and South Gates of Baghdad had survived up to 1925 and 1937 respectively. They were replaced by the two main squares of Baghdad, while the north-west and south-east walls similarly gave way to consequent roads, serving new residential and other urban land uses in their immediate neighbourhood.

All these peripheral land uses were located around the fixation line of the fringe belt as it was here that ample cheap land was available.

During this period the fringe-belt land uses of Baghdad had both extramural and intramural location in relation to the wall lines and their morphogenetic continuation in the eastern dykes and the railways. Such associated land uses comprised the railway works, the airport, industrial units, residential complexes, cemeteries, koors (rudimentary brickworks), gardens, orchards and the like. The chief railway stations, built in the previous period, i.e. Baghdad East, Baghdad West and Baghdad North had been located at some distance from the built-up areas of Karkh and Rusafah. They soon became foci for more development, particularly in the following period. Baghdad West Station, 2 km to the west of the Tigris, was the terminus for the Basrah and Karbala lines; Baghdad North Station in al-Waziriyah was the terminus of the Khanaqin and Kirkuk lines, and Baghdad East Station in Bab al-Sheikh mahallah was an intermediate station.

Baghdad West Station had succeeded in disfiguring the old and large cemeteries of Sheikh Maruf and Sheikh Junaid, dominated by their free-standing tombs with minarets. This station was the reason for the construction by Germans of few houses in the Shalchiyah area, occupied by railway officials. In 1921, the main workshops of the railway were brought from Shuaibah, in Basrah Liwa to al-Shalchiyah on the West Side of Baghdad. Shalchiyah is now one of the major industrial sectors of Baghdad. A railway ferry over the Tigris, east of al-Shalchiyah went into operation in 1923 and was replaced by a combined railway and road bridge in 1951.

Functional and physical readjustment of Baghdad to the introduction of the railways, both in the fringe belt and in the commercial centre was slow and slight compared with the response of British towns which had been revolutionized during the railway era. Indeed, few morphological developments in Baghdad can be attributed to the twentieth century advent of this innovation. However, working class houses, storage yards, sidings etc. did owe their location to the layout of the railways which therefore acted as an additional fixation line. The construction of Baghdad's first airport in 1932 close to Baghdad West Railway Station, has expanded the fringe-belt extramural westwards. As the land was 'miri sirf' i.e. state-owned it was easy to accommodate sizeable government installations such as railway sidings, customs' offices and airports.

The infiltration of international elements, i.e. European influences indeed started in this period. To be sure it was occurring simultaneously in the commercial centre and in the fringe belt of the city. The case of the former has already been discussed while in the fringe belt the western influences can be seen in the railway stations, the airport, the advent of new industries and other features.

One cannot complete the analysis of earlier fringe-belt development in Baghdad without reference to a most interesting and important morpho-genetic peculiarity, i.e. the existence of more than one fixation line in the same belt. The early twentieth-century construction of the Eastern Dyke on the East Side and the railway on the West Side have in fact added a new set of fixation lines to the original one a phenomenon not yet reported from other towns. Thus the Old Town walls, notwithstanding the considerable difference in age between Rusafah's wall (eleventh century) and Karkh's wall (early nineteenth century), must be distinguished

as a primary set of fixation lines in Baghdad's first fringe belt from the eastern dyke and the roughly contemporaneous railways as a later, second set within the same belt. The distinction is necessary not only because the two sets do not coincide topographically except on the north-east side of Rusafah but because each set gave its own distinct impulses to the growth of the fringe belt and with varying topographical implications. In this way, Baghdad's first fringe belt can be seen as something of twin belt with two contiguous and concentrically arranged zones, each depending morphologically on its own sets of fixation lines.

Owing to the fact that the West Side is more secure from floods the secondary fixation line, i.e. railway was to influence the development of the fringe belt, particularly in the next period compared with the secondary fixation line on the East Side. On the West Side the influences were observed both intra- and extramurally. This is distinctly seen in the following periods when western influences increased emphasizing the contrast between the traditional intramural and the extramural dominated by western forms.

In spite of the differences between the secondary fixation lines on the East (dyke) and West sides (railway) they have a characteristic analogy i.e. both have expanded the fringe belt ⁿlogitudinally and transversely in relation to the Tigris. The former expansion occurred earlier than the latter. The northwest - southeast expansion of the fringe-belt along the secondary fixation lines commenced on both sides of the river in the period, 1920 - 1936, whereas transverse expansion became more prominent in the following period.

Because of restricting floods in the north-east transverse expansion was earlier and much more vigorous on the south-west side, where subsequently the fringe belt reached al-Khair Canal more than 1.5 km from the nearest point of al-Karkh's primary fixation line. Here, as

already mentioned, the old airport came to be an important distal development occupying a large area. The railway on the West-Side still belongs to the first, now Inner Fringe Belt, because most of the proximal and distal extramural land before the establishment of the railway was owned by the state. Nearly all development to come in the next period was of fringe-belt nature, some of which is directly or indirectly related to the railway.

The overall effect of the railways on the fringe-belt's functional composition was the concentration of transport and industrial development in the area. Railways promoted some kind of functional segregation in distinct sections of the fringe belt. This is seen in the next period where one can find that transportation land uses have been concentrated in proximal extramural areas to the south west, west and northwest of the primary fixation line. They are represented by Baghdad West railway Station, the airport and related land uses. Industries which emerged in various parts during the next period, were concentrated between Kadhimiyah and Karkh lining the secondary fixation line i.e. the railway.

Owing to the flood danger, the secondary fixation line of the East Side, i.e. the eastern dyke failed to attract extramural development before 1956, the date marking the introduction of effective flood control. This means that here the secondary fixation line expanded the fringe belt only intramurally, compared with what has already ^{been} seen on the West Side. However, in the period 1920 - 1936, Baghdad continued to be under the threat of floods. The city suffered two floods, in 1923 and 1926. Damage had been brought to the outlying mahallahs including the railway stations. Thus the old dyke (see Part II) was extended from al-Sulaikh northwards and to the Diyala river southwards

elongating the north-eastern fixation line and defining the growth pattern of the city and its fringe belt up to 1956. This had therefore most important morphological consequences and explains why no considerable development took place outside the eastern dyke, except for some brick-works and for the shanty towns which unhappily became a very prominent feature in the physiognomy of the City of Baghdad after the Second World War. Through this dyke the whole land strip between the Sulaikh and Diyala river became more secure against flooding. Thus the British were able to lay out the lawns and avenues of al-Sadun Park to the south of al-Rusafah, which became the chief city park during the next period.

Similarly between Karradah al-Sharqiyah and Rusafah on al-Sadun Street, the foundations of the metropolitan mosque of al-Shahid were laid, a building that had to wait patiently until 1971 to be completed.

Cemeteries of all denominations were still extramural on both sides of the city, although some Moslem cemeteries were intramurally located, perhaps because it was thought undesirable that floods should affect consecrated land.

The desert surrounding Baghdad began to recede^e quickly with the growing increase in cultivated land. Several settlements of Arab tents had grown up in Baghdad, some of which doubtless tended to be semi-permanent dwellings. In spite of orchards and green spaces being swallowed up by the growth of the built-up area, Baghdad was still flanked to a large extent by a belt of palmgroves, 500 to 2,000 m wide on both sides of the Tigris. This green belt with its shady trees and cooling effect of the river became increasingly the scene for modern residential colonization. Major public parks were developed beyond Bab al-Mudham and along al-Imam al-Adham Street and in Bab al-Sharji area, which in the course of development became part of the Inner Fringe belt.

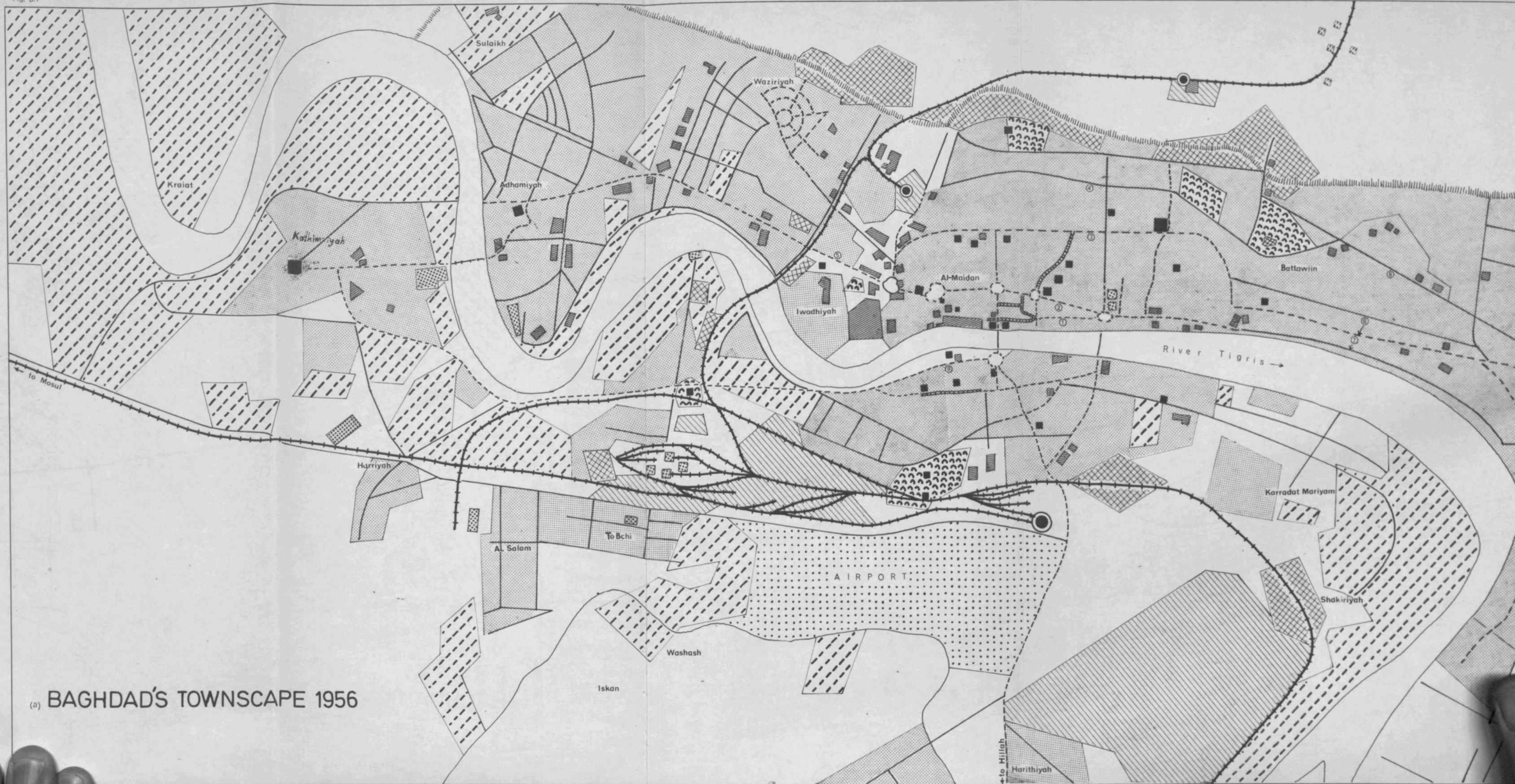
1. H.V. Cooke, Challenge and Response in the Middle East, The Quest of Prosperity, New York (1952), 20.
2. M. F. Darwish and I. Dinkur, Dalil al-Mamlakah al-Iraqiyah, al-Rasmi, (The Official Directory of the Kingdom of Iraq, Baghdad, (1936) 108.
3. G. S. Shiber, Recent Arab City Growth, Kuwait (1967), pp 150 - 170.
4. Amanat al-Asimah, A Report on the Master Plan of Baghdad, Baghdad (1936) (Translated into Arabic) (mimeographed).
5. Amanat al-Asimah, op. cit.
6. John I. Clark, The Iranian City of Shiraz, Department of Geography, University of Durham, Research Paper Series, 7 (1963) 6.
7. Sen-Doa Chang, Some Observations on the Morphology of Chinese Walled Cities, Annals of the Association of American Geographers, 60 (1970) 83.
8. A. al-Hilali, Mujam al-Iraq, (the Directory of Iraq), Beirut, 2 (1956) 157.
9. A. Said, Aiyam Baghdad (The Days of Baghdad), Cairo (1933), 19; A. al-Samarraie, Transportation in Iraq, Ph.D. Thesis, submitted to Reading University (1968) pp. 47 - 58; M. B. Stratton, British Railways and Motor Roads in the Middle-East, 1918 - 1930, Economic Geography, 20, 2 (1944) 120; S. H. Longrigg, Iraq, 1900 to 1950, A Political, Social and Economic History, London (1953) 172.
10. S. A. al-Juburi, Means of Transport in Old Baghdad, Baghdad Observer, March 17 (1968).
11. Encyclopeda Britannica, Vol. 2, London (1965) 1034.
12. Darwish and Dinkur, op. cit. 273

13. A Committee of Officials, An Introduction to the Past and Present of the Kingdom of Iraq, Baltimore (1946) 70.
14. H. al-Adhami, Tarikh Masajid al-Adhamiyah Wa Abu-Hanifah (The History of the Mosques of Adhamiyah and Abu-Hanifah, Baghdad, 2 (1965) 291.
15. D. G. Adams, Iraq's People and Resources, University of California Publication in Economics, Vol. 18, Los Angeles (1958) 34 - 5.
16. H. H. Boesch, El-Iraq, Economic Geography, 15, 4 (1939) 347.
17. Naval Intelligence Division, Iraq and the Persian Gulf, Geographical Handbook (1944)353.
18. Darwish and Dinkur, op. cit. 662.
19. R. Coke, Baghdad, the City of Peace, London (1927) Translated into Arabic by F. Jamil and M. Jawad, Baghdad, 2 (1967) 217.
20. Said, op. cit. 81
21. Darwish and Dinkur, op. cit. 271
22. Amanat al-Asimah, Personal Interview, Baghdad (1971).
23. Coke, op. cit. 310.
24. J.H.G. Lebon, The site and Modern Development of Baghdad, Bulletin de la Sociéte de Géographie d' Egypte, Tome XXIX (1956) 32.
25. R. J. Solomon, Procedures in Townscape Analysis, Annals of the Association of American Geographers, 56 (1966) 254.
26. J. M. Houston, A Social Geography of Europe, London (1953) 109;
J. M. Wagstaff, House Type as Index in Settlement Study, a Case Study from Greece, The Institute of British Geographers, 37 (1965) 69.
27. Said, op. cit. 81

28. Reuben Levy, A Baghdad Chronicle, Cambridge, 1929, pp. 2 - 3.
29. Al-Samarraie, op. cit. 51
30. Said, op. cit. 76

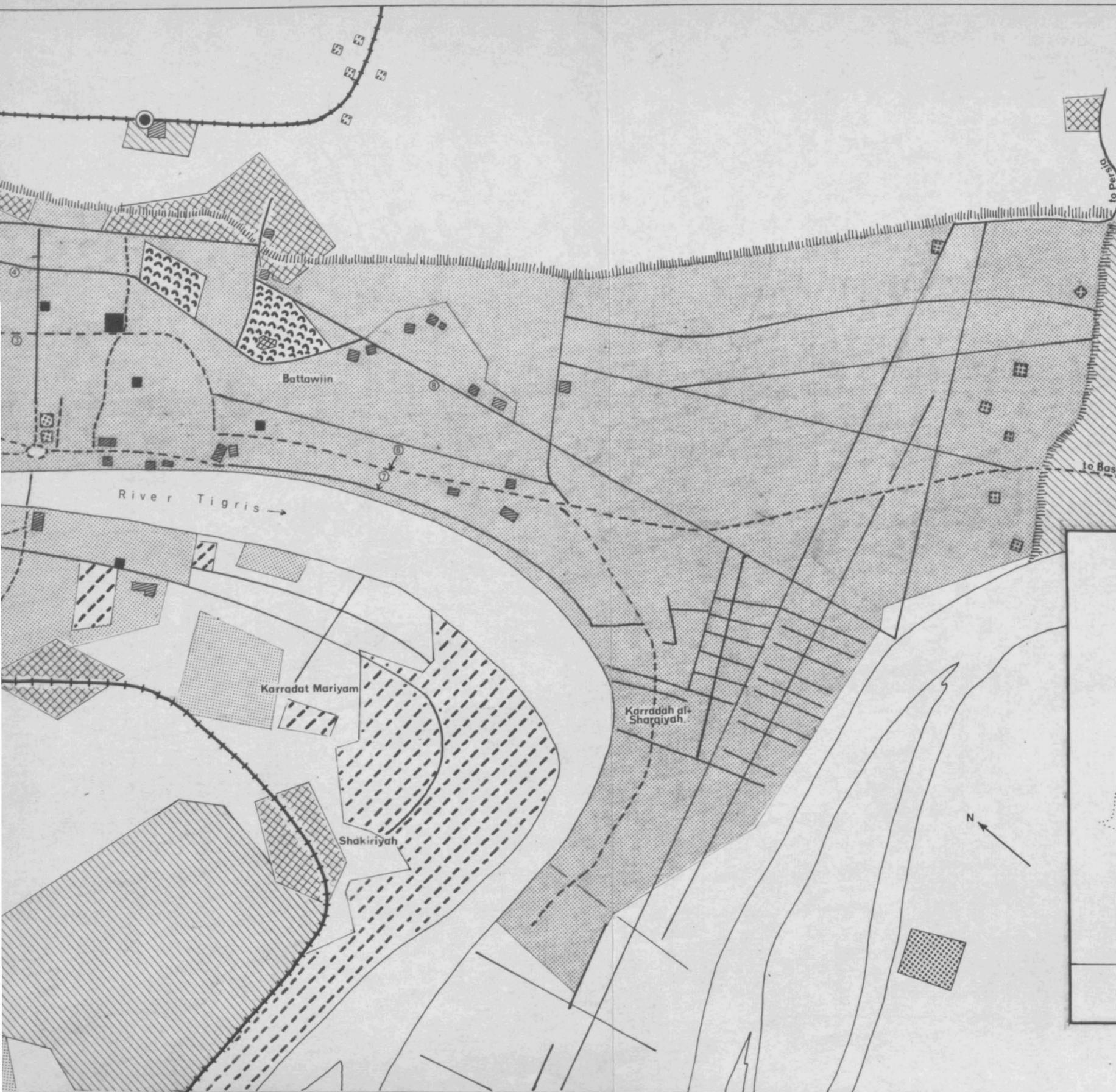
31. Darwish and Dinkur, op. cit. (1936) 273.
32. Said, op. cit. p. 77
33. Pierre Murthelot, Baghdad, Notes de Géographie Urbaine, Annales de Géographie, 74, 401 (1965) 31.
34. Said, op. cit. 77
35. Longrigg, op. cit. pp. 164 - 170
36. Darwish and Dinkur, op. cit. 838
37. M. R. G. Conzen, *The Analysis of an English City Centre*, printed in Conzen op. cit. (1962) 406. *Proceedings of I.G.U. symposium in urban Geography, Lund, ed. by K. Norberg, Lund, (1962) 406.*
28. M. H. Salman, The Economic Development in Iraq, 1864 - 1858, Beirut 1 (1965) pp. 85, 292, 295; Al-Muktataf Magazine, Cairo, 2, 50 (1934). 188; Darwish and Dinkur, op. cit. 795; Longrigg op. cit., p. 210; al-Isbu al-Arabi Magazine, 16, 597 (1970).
39. Al-Hilali, op. cit. 221
40. Longrigg, op. cit. 202
41. Majallat Churfat Tijarat Baghdad (Baghdad Commercial Chamber Magazine) Baghdad 586 (1951) 312.
42. Said, op. cit. 82
43. J. I. Clarke and B. D. Clark, Kermanshah, An Iranian Provincial City, Department of Geography, University of Durham Research Paper Series 10 (1969) 72.
44. K. M. Ismail, Thikraiat Ibrahim Salih Shukur (Memories of Ibrahim Salih Shukur) or Qalam al-Qazir (The Pencil of the Minister), Baghdad (1970) 75.

45. M. Darwish, M. Jawad and A. Susa, Dalil al-Jumhuriyah al-Iraqiyah, (Directory of the Republic of Iraq) Scientific Encyclopedia, Historical, Geographical, Industrial and Commercial, Baghdad (1960) 270.
46. Al-Adhami, op. cit. 291
47. S. al-Hissari (Abu Khaldun), Thikraiyati Fi al-Iraq, (My Memories in Iraq), 1921 - 1941, Beirut, First Edition (1967) 102.
48. Al-Adhami op. cit. pp. 190 - 91, Field Survey 1971.
49. Darwish and Dinkur, op. cit. 236.
50. Unpublished Records of The Ministry of Education; The Annual Book of the Ministry of Education, Baghdad (1967) pp. 12 - 14
51. Al-Isbu al-Arabi, op. cit. 104; Darwish, Jawad and Susa, op. cit. (1960) 333; Darwish and Dinkur, op. cit. (1936) 575.
52. Al-Hilali, op. cit., pp. 33 - 37; Longrigg, op. cit. pp. 204 - 5; Said, op. cit. 169; Darwish and Dinkur, op. cit. (1936) 271.



(a) BAGHDAD'S TOWNSCAPE 1956

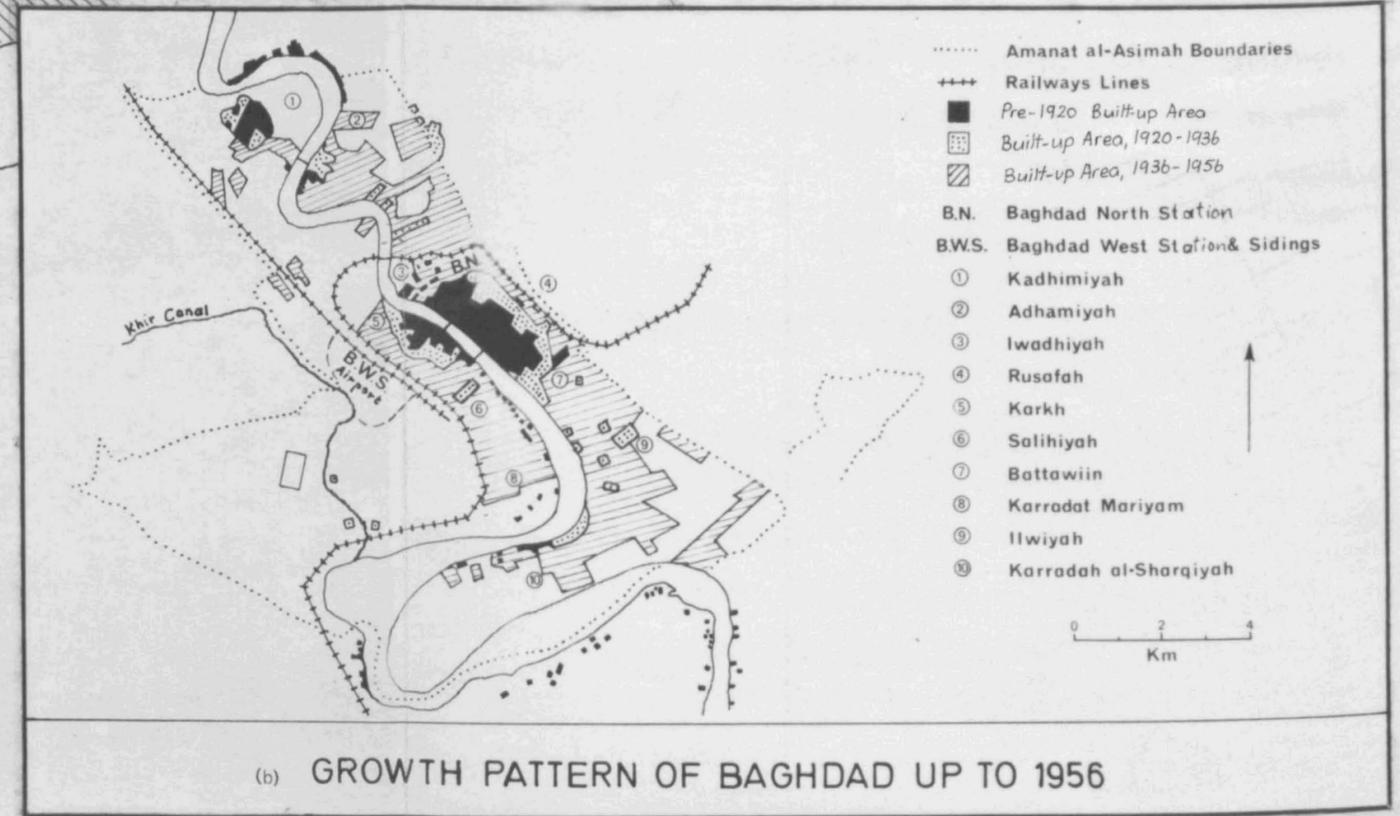
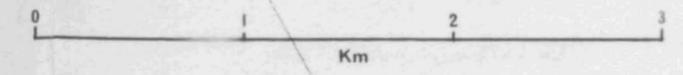
BAGHDAD'S GROWTH PATTERN 1936-1956



- Dyke
- Streets developed before 1936
- Streets developed between 1936-1956
- Railways
- Main Bazaar
- Sahah (Square)
- Main Mosques & Shrines
- Modern Industries
- Government & Embassy Buildings, Educational, Cultural & Health Institutes
- Residential Land Use
- Railway Stations

- ① AL-Nahr Street
- ② AL-Rashid Street
- ③ AL-Kifah Street
- ④ Sheikh Omar Street
- ⑤ AL-Jam'iyah Adham Street
- ⑥ AL-Sadun Street
- ⑦ Abu Nuwas
- ⑧ AL-Nidhal
- ⑨ Musa al-Kadhim Street

- Fringe Belt
- Cemeteries
 - Military Land-use
 - Orchards & Playgrounds
 - Sarifah & Kukh Settlements
 - Airports



(b) GROWTH PATTERN OF BAGHDAD UP TO 1956

CHAPTER 8

The Fourth Morphological Phase 1936 - 1956

The fourth morphological phase in Baghdad's development went far to give the city its present shape. The change was a consequence of evolutionary processes engendered by foreign, i.e. western, and local factors. The former are reflected in transportation, technological and economic development. The last, however, was based on socio-economic changes in local society which in turn was influenced by an increasing process of westernization. This is equally observable in growth pattern, housing development, street system, land uses, mode of life and above all in the morphology of the city.

The Growth Pattern and Politico-economic Development: (Fig. 8.1)

The period can be divided into two sub-periods: 1936 - 1945 and 1945 - 1956. Morphologically, such division is expressed in the differentiation of house types. Though these are intermixed in various parts of the city development after 1936 they are easily distinguishable, as will be shown later in this chapter. Each house type reflects the socio-economic status, the technological standard and age of development.

Streets on the other hand are not reliable criteria in this context as both sub-periods show much the same geometric patterns designed to accommodate vehicular traffic. Houses typical of the two sub-periods are recognizable by the distinctiveness of their internal and external features.

The design of the first type was abandoned abruptly after 1945, when the western house invaded the city. Even now the western plan is exclusively adopted in new houses regardless of the economic status of the owner or the location of the house.

In the first sub-period Baghdad was a traditional Arab city with characteristic mahallahs and street system. In its second sub-period, the city was characterised by the growth of suburbs. The physical growth of Baghdad, proceeded without the support of any comprehensive planning or supervision. This allowed the introduction of new forms out of step with the social and climatic context of the area.

During the whole of the main morphological period and as a direct result of population increase and the growing importance of Baghdad economically and as the focal point of the transport system of the country, the city expanded physically. For the first time its community began to realize the necessity of adapting itself to the life of this era, in terms of such aspects of modernization as providing more public amenities, traffic circulation, public buildings to house the growing complex of administrative functions, banks to facilitate the increasing commercial activities, parks and the like. Consequently, the city began to show completely new forms of development; tall new modern office blocks were being built along the new break-through streets and on the banks of the Tigris, old traditional buildings were continually being pulled down. This process was to be accelerated in the fifth morphological period when the city became something of a "modern" town. The flat silhouette of the townscape, so characteristic of traditional Baghdad began to be broken in this and the following period. Where formally minarets and domes had been the only dominant elements in the city's skyline, skyscrapers or semi-skyscrapers, and even four-storey buildings now created big discordances in the visual ensemble of the townscape. The homogeneity of Baghdad's physiognomy, particularly in the centre, diminished gradually.

The city began to face socio-economic and physical problems never met before. One of the worst was, and still is, the immigration from the rural areas, which precipitated the kukh and sarifah camps, ^a creating ^{put} a problem that Baghdad in a bad position as the whole "modernization" process failed to cope with this uncontrolled influx. Migration, as far as it influenced the city in its modern life and structure, will be analysed in chapter 9.

Baghdad in this period grew rapidly along both sides of the Tigris and by the end of this period the built-up area almost reached Adhamiyah and Kadhimiyah to the north and Karradah al-Sharqiyah to the south (Figs. 8.1, 8.19, 8.20). However, there were still vacant plots in the built-up area. As Baghdad sprawled it had to face many problems, in maintaining social facilities in the new suburbs. Much agricultural land including palm groves had been replaced by bricks and mortar. In spite of the fact that most of the land was state-owned, the authorities did not interfere to prevent such unhealthy expansion, which became therefore one of the most prominent features of Baghdad's growth. The built-up area covered the Abbasid area of the Round City and its environs, parts of Baduria and Katrabul. (See Part III).

The built-up areas expanded during this period filling all the vacant tracts between the pre-1936 city boundaries and the East Dyke. With this growth the city now covered an area of 101 sq. km. The rapid northward and southward expansion occurred because of the construction of the new dyke stretching from Sulaikh in the north to Diyala River in the south (see Part II). Thus the river formed the main axis of the city's development, with beneficial effects on nearby areas as it tempered the local climate was considered an

important recreational line within Baghdad offering the most pleasant views.

As a result of the new developments Baghdad changed increasingly from an Arab city to a hybrid one being neither Arab nor Western, a fact which will become apparentⁱⁿ the following sections.

Physical expansion was mainly residential, but now following a spontaneously operating income pattern rather than any premeditated land use control, which was not to become effective until the late 1960's.

During the Second World War, the city stagnated but after the end of the war continued its "modern" expansion, this time as the combined results of the movement of increasing numbers of migrants and the greater use of public funds for reconstruction and development. Oil revenues which had begun to be exploited from 1927 on increased particularly after 1945, bringing the country into a new era of economic prosperity, without having to have recourse to foreign loans. As a result most Iraqi cities and towns were linked with Baghdad by highways, and a Development Board was established in 1950 to carry out construction processes of all kinds. In 1930 Iraq had some 7,000 kms of roads of which about 200 kms were under tarmac, but the total length of these all-weather roads had increased to over 2,300 kms¹ by 1950.

The city's growth was influenced by the increase of available funds from the Development Board after 1951, new streets being paved and lit, and new industries developed.* This Board was established

* In 1951 \$ 18,765,000 for various projects in agriculture, manufacturing, transportation and housing were allocated to the Development Board. In 1955 this amount jumped to \$ 165,472,000²

at the demand of the International Bank as a condition for the granting of a loan for the Wadi al-Tharthar project. Large sums were allocated by the Board for building projects during the period after 1951: 5,400,000 I.D. for hospitals and health institutions; 5,400,000 I.D. for schools; 5,25000 I.D. for public buildings and 1,650,000 for housing.

Its first five-year programme was initiated in 1951, allowing the expenditure of some 155 I.D. millions. Since then 70 per cent of the increasing oil receipts have been transferred to the Board to carry out its nation-wide projects.³ Figures for the new 1955 - 1960 development plan, with its great emphasis on building in absolute as well as relative terms and the following periods are shown in the following table:

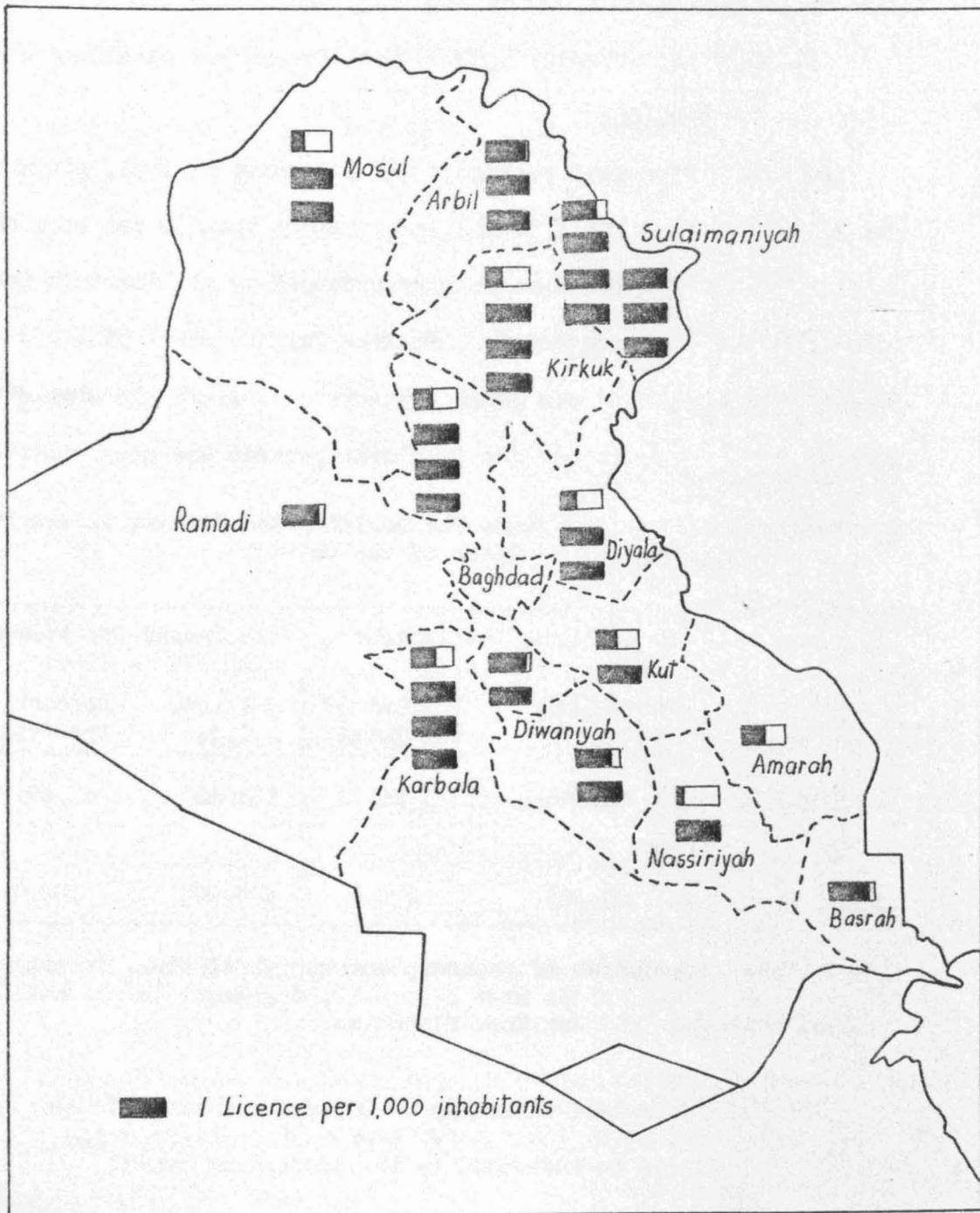
Table 8.1 Allocation of Funds for Building and Housing in the First two Development Plans of the Country

	The First Development Plan 1955 - 1959.		The Second Development Plan 1955 - 1960.	
	Millions I.D.	Percent of the Total	Millions I.D.	Percent of the Total
Building & Housing	48,650	16	104.360	20.9
Total Programme	301.305	100.0	500.007	100.0

Source: U.N. Department of Economic and Social Affairs, Economic Development in the Middle East 1956 - 57, Supplement to the World Economic Survey, 1957 New York (1958) 44.

The rapid physical expansion of Baghdad and other Iraqi towns during this period is indicated by the increasing number

Fig. 8.2 Building Licences Granted per Liwa (Average for Years 1952; 1953; 1954)



of building licences as shown by the following table.

Table 8.2: Building Licences Granted, by Liwas (Fig. 8.2).

Liwas	Estimated pop. 1953, for towns & settlements over 2,000 inhabitants.	Licences for new buildings					
		No.	1952 Per 1000 inhab's.	No.	1953 Per 1000 inhab's.	No.	1954 Per 1000 inhab's.
Mosul	220,000	263	1.20	717	3.26	469	2.13
Arbil	45,000	99	2.20	118	2.62	171	3.80
Sulaiman-iyah	45,000	257	5.71	316	7.02	459	10.20
Kirkuk	100,000	237	2.37	439	4.39	325	33.25
Diyala	90,000	167	1.85	178	1.98	287	3.19
Baghdad	660,000	2,006	3.04	2,329	3.53	2,350	3.56
Karbala	115,000	356	3.10	394	3.43	468	4.07
Hillah	78,000	111	1.42	143	1.83	188	2.41
Kut	95,000	119	1.25	163	1.72	129	1.36
Amarah	90,000	53	0.59	57	0.63	49	0.54
Ramadi	75,000	52	0.69	35	0.47	86	1.15
Nassiriyah	125,000	124	0.99	104	0.83	192	1.54
Diwaniyah	135,000	341	2.53	190	1.41	187	1.39
Basrah	245,000	158	0.64	178	0.73	282	1.15
TOTAL	2,118,000	4,343	2.05	5,361	2.53	5,642	2.66

Source: Doxiadis Associates, Housing Problems, Policies, Programmes in Iraq, Ahtenes, 1 (1959) 125.

When the Government mortgage bank was established in 1950⁴, the tempo of the building industry accelerated further.

During this morphological period Baghdad saw its first automatic telephone exchange, which covered the new suburbs with its operation and became indispensable for urban life. Iraq then became a member of the International Postal Union. The new wireless transmitting station was completed in 1951 at Abu-Ghraib, to the west of al-Karkh, with the most modern design and range.

It secured communication with Europe and America and was used for national broadcasting. This site has recently been incorporated within the outerfringe belt of the West Side.

Railway developments in this period have enhanced the city's geographical situation. In 1940 and 1949 respectively the standard-gauge connection of Baghdad with Tel Kochuk and the extension of the metre gauge main line from Kirkuk to Arbil, were opened.⁵

In 1950/51, the rail/road bridge of al-Sarrafiyah was opened. As a direct result, land, almost exclusively owned by the family of al-Damarchi, was subdivided into plots ranging from between 150-300 sq. m near the bridge to 400 - 1200 sq. m. further to the west, north and south. The building of houses chiefly by the middle and upper middle classes began to take place^{at} the expense of existing orchards and palm groves.

Residential development in this period was of ribbon and scattered pattern. In the following period the area mushroomed almost in all directions. It joined the houses built at al-Shaliyah in 1940 by the Iraqi Railways for the railway clerks which were of 60 - 80 sq. m. each. This residential sprawl increased early in the 1950's, when several additional groups of houses were built by the railway authorities. These developments encouraged further private development and helped to fill up the area between Kadhimiyah and Karkh a process still continuing.

The Railway Establishment contributed more to the development of the city, when Iraqi Airways were founded in 1946 as its subordinate enterprise, with aid from B.O.A.C. From then on Iraqi airlines gradually increased their activities.⁶ By 1954 Baghdad had nine airline companies. The airport, extramurally located in the pre-

1936 period, began to lose some of its original locational advantages as the city leapfrogged its old fringe belt to the south-west.

The development in air transport compensated to some extent for the long situational decline experienced by the city in its previous history particularly when Iran began to attract traffic from Mesopotamian routes after 1936. Al-Muhammarah begun thus to replace Baghdad's importance in this respect.

River transport became unprofitable for big companies and therefore declined. The total upstream movement in 1942 from Basrah was estimated as 600 tons a day.⁷

Some significant political events directly and indirectly influenced Baghdad's development. The city was considered the headquarters of the Baghdad Pact, established in 1953 but which collapsed as a result of the 14th-July revolution of 1958. Many political military and economic departments had their offices in Baghdad, thus increasing its service centrality and capacity to bring in foreign money.

Between 1920/21 when Iraq gained its independence and the 1958 revolution, Baghdad saw no less than 59 governments in power. The average period of office for each government was about six months. This was one of the factors behind the uncontrolled growth and lack of improvement in the city. It means that Baghdad and the whole country continued to be characteristically unstable which naturally influenced the chances of any prosperity for the city.

In 1951, Act No. 3 was issued which 'froze' the properties of Jewish people who had left the country. Most of the 120,000 Jews⁸ were allowed to emigrate to Palestine. This changed the overall commercial pattern. The number of Jews leaving the country for

Palestine after 1947 has been put by some at 80,000. In 1957 there were only 3,600 Jews left in Baghdad. Most of them, over 80 per cent lived in Sadun and Battawiin.⁹ The properties held by Jews were either privately owned or government lots held on long lease. The former were concentrated in the areas developed before 1936 while the latter were to be found in the new suburbs developed after 1936, mainly on the East Side.

Jewish owners sold almost all their properties a considerable time before they emigrated. Those properties which have not been sold are mainly leased by the government. The unsold properties are administered by a Directorate General within the Ministry of Interior and are now leased annually by auction. Nearly all these properties are dwellings houses with a few shops, the annual rent per house varying according to location and style, from 130 I.D. in the traditional mahallahs such as Bani Said to 400 I.D. in Battawiin. These properties are found in three districts, the first stretching from Bab al-Sharji to Karradah al-Sharqiyah, the second stretching between Bab al-Sharji and Adhamiyah, within the area between the Tigris and the present Jumhuriyah Street, the third covering the areas between al-Jumhuriyah Street and the lines of the medieval wall; the number of properties are as follows:-

	<u>Number of Properties</u>
The <u>First</u> district	276
The <u>Second</u> district	495
The <u>Third</u> district	550

It is interesting to note that the second district is the commercial centre, where 348 of the properties are shops and khans respectively, compared with the other two districts where most of the

properties are houses.¹⁰

On the other hand, the sudden advent of Arab refugees from Palestine enhanced urbanization in most of the Arab countries of the Middle East. In Baghdad the number of Palestinian refugees exceeded 11,000 in 1953. This has influenced the morphology of the town, the government distributing apartments and small houses for the purpose in the centre and in al-Hurriyah and al-Topchi.

Some of the Palestinians began to run various businesses in the town. Although the city's major growth pattern was of elongated shape along the Tigris the city has also spread in a north-east and south-west direction and in some instances has leapfrogged the increasingly consolidating fringe belt on either side of the city. In the 1930's al-Mansur had emerged beyond the Khir canal as a race course and a distal element of the extramural parts of the fringe belt. In the 1950's al-Mansur began to grow quickly by both public and private investment. Some royal palaces were built near the site, increasing the residential prestige of this area.

Baghdad al-Jadidah (New Baghdad) was built after 1936/1937 but on the East Side beyond the East Dyke, so that it had to have its own subsidiary dyke. Nevertheless, because of the flood danger, this locality failed to grow until 1956 when the city was freed from the danger of flooding.

In 1946, 207 houses with wooden roofs were built by the government between Baghdad al-Jadidah and the East Dyke in Tel-Muhammad locality, some 7 km from Baghdad. At first these houses were either rented monthly at 1.5 - 2 I.D. each or sold to low-income people for 400 I.D. each. This was followed by the construction of another 244 houses with 'I' steel joists in 1952, and distributed to workers and some government employees. The government's contribution to the residential

expansion of the city in this period can be seen below:-

Table 8.3: Houses provided before 1956

Area	Side of the City	No.
Tel Muhammad	East Side	1,879
Al-Zufaraniyah	"	850
Sheikh Omar	"	258
Twaithah	"	50
Shamaiyah	"	25
Al-Salam	West Side	1,437
Al-Huriyah	"	1,000
Civil Airport	"	93
Total		5,592

Source: Unpublished Records of the Ministry of Public Works and Housing, Baghdad (1971).

These houses were distributed to wage-earners and minor civil servants for nominal prices of from 354 - 800 I.D. each.

In this period the Old Town remained the focal point, surrounded by spreading residential accretions in all directions, though an axial north-west to south-east pattern of growth was maintained within the limits of the dykes on the East Side and the railway line on the West Side (Fig. 8.1).

The city assumed a dual character with a marked contrast between the old compact plan evolved primarily for pedestrians and animal transport and the spreading new plans of residential suburbs with streets designed for motor vehicles.

By the close of this period in 1956, and on the next period, five house types accounted for the differential character of the city's

building fabric as determined by the field survey. They are (1) the compact traditional Arab courtyard house built before 1920, (2) the terraced modified courtyard house built before 1936, (3) the covered courtyard house built before 1945, (4) the closed western house type which emerged after 1945, (5) sarifahs or reed huts and kukhs or mud huts illegally built of a temporary nature. These forms had first multiplied within the medieval limits of the city but then gradually appeared outside them, though within the limits of the area safe from flooding.

The modified courtyard houses of the well-to-do bourgeoisie from before 1936 expanded and changed to the villa type later. The aristocrats and some high middle class moved out as the central area became increasingly crowded with commercial premises, thus creating the new elite suburbs.

In descending order of space requirements, the detached one-family houses of 1936 - 1945, i.e. the covered courtyard type top the list, followed by the high-and middle-class houses of western type built after 1945, the terraced modified courtyard houses, the low income class houses of western type built mainly after 1945, the traditional courtyard houses, and finally the kukh and sarifah dwellings. These morphological distinctions are drawn from architectural, functional and social features which are inextricably associated.

Population Growth and Distribution.

Winsborough states that "an increase in population size must be accommodated by an increase in congestion or a decrease in concentration, or some compensatory change in both.¹¹ This is true of Baghdad and as such its physical growth^{is directly related and influenced by the growth} of its population. Also, land values and uses have been influenced by such population development.

Further, economic and religious composition has had a profound effect on the distribution of the population and thus on the townscape of the city. Distribution density, type and extent of houses have been influenced largely ^{by} the distribution of population. As already mentioned new suburban areas contrast with traditional central areas. Economy and governmental decision and to a certain extent tribal or regional factors have exerted their influence on the growth of the city. Each group had its own socio-economic background which in turn differentiated its mahallahs.

Unfortunately there are great deficiencies in the available population data. Discrepancies are found not only when these data are provided by different governmental offices, but even when they come from one of the same department. However, the following table gives some idea of the growth trends of the city during this morphological period.

Table 8.4: Population growth of Baghdad between 1936 - 1956.

1936	360,000 ¹²	1954	675,595 ^{**}
1937	367,000 ¹³	1955	620,000 ^{***15}
1947	466,783	1956	730,549 ¹⁸
1952	487,159 ^{*14}		

* This was based on the 1947 Census figure '503,166' appearing in the official Atlas of Iraq. An allowance of $1\frac{1}{2}$ per cent per year amounting to 65,410 was added for the natural increase while the then existing sarifah population was assessed at 107,025 persons.

** A. Susa put the population of Baghdad in 1952 at 750,000, two thirds of which were on the Rusafah side.¹⁶

*** The population of the city was put at 515,459 by the Republican Directory.¹⁷

As a result of this growth in population the existing built-up area no longer sufficed, it erupted beyond them, adopting new plan elements in both housing and transportation.

The population of Baghdad grew at a higher rate in the decade 1947 - 1957 than the rate of other Mesopotamian towns and the total population of Iraq as a whole. This could never be caused by births alone but resulted from a large and continuous rural influx to Baghdad.

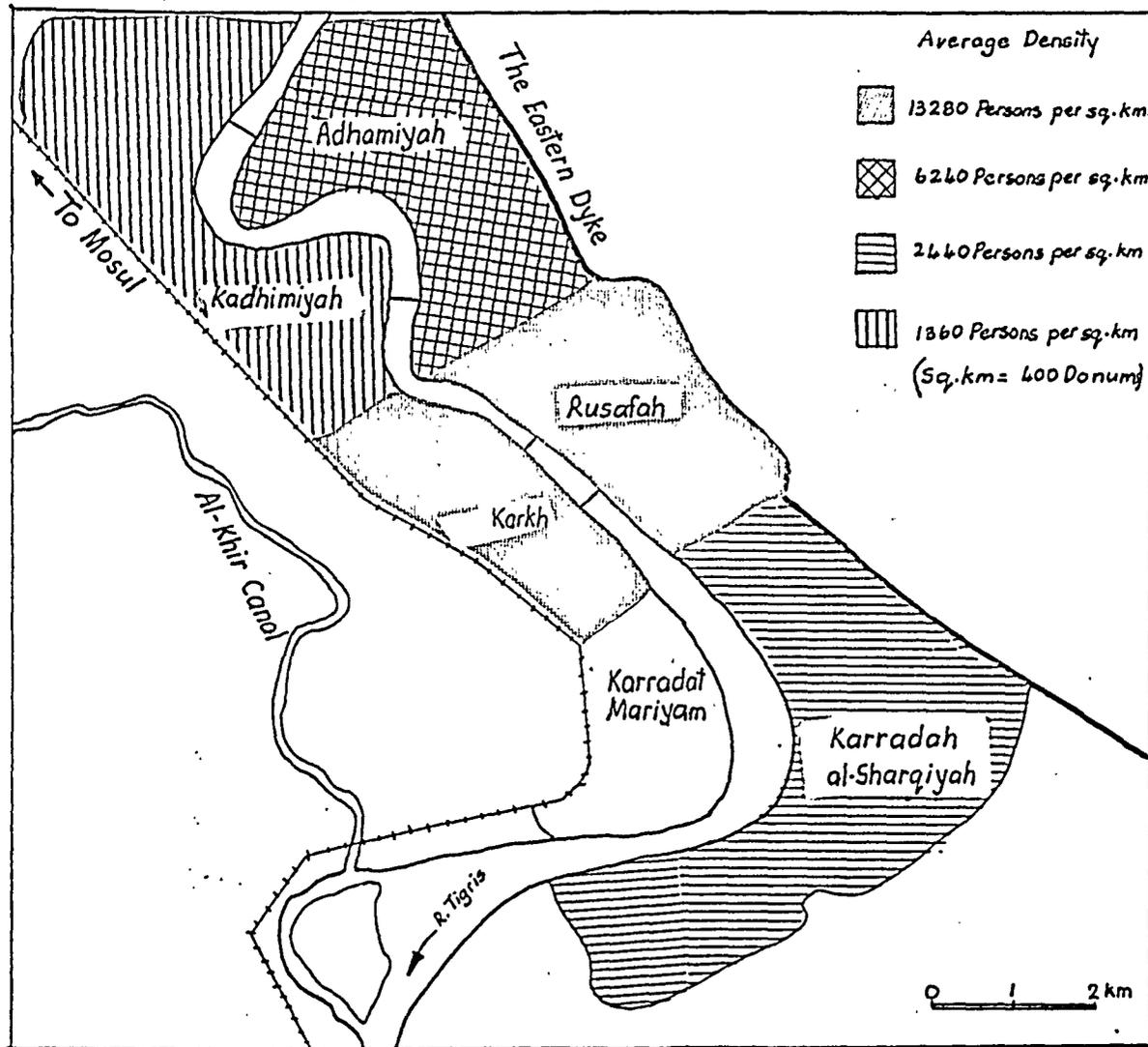
With the rest of the country Baghdad had to wait until 1947 for the first general census and before that no survey of the urban centres was made. Unfortunately this census did not give any information about the distribution of population by religion. The detailed results of this census were published in 1954. Certain breakdowns can be made to indicate the nature of Baghdad's growth and population structure. In 1947, Baghdad Liwa (817,207 population) had the highest population density of 64 persons per sq. km compared with the average density of 20 persons/sq. km over the whole country. Baghdad Qadha had the highest density of 194.7 persons per sq. km, while the lowest density within the liwa was that of Samarra Qadha with 5 persons per sq. km. Baghdad City then contained 57 per cent of the liwa's population and about 10 per cent of the country's population. It had 466,783* inhabitants. This figure included the population of Kadhimiyah, Adhamiyah and Karradah al-sharqiyah, all of which were

* Lebon considered the population of Baghdad to be 321,225 plus 145,508 in the suburbs, plus 48,676 persons in Kadhimiyah. The total thus was 515,409.¹⁹ In 1947 the birth rate per 1,000 was 32, the death rate 16, the rate of natural increase 16, and the rate of infant mortality 132. With relative progress in health services and improvement of living standards, the birth rate, death rate and infant mortality rate per 1,000 were estimated in 1950 at 27, 12 and 97 respectively.²⁰ Even with this obvious decline in the fertility ratio, Iraq still had a high rate compared with industrial countries. The fertility ratio can be computed by relating the number of children under 5 years to the number of females under 39 (child-bearing age):

Fertility ratio = $\frac{\text{children under 5 years of age}}{\text{Females aged 10 - 39}} \times 1000$

However, most Iraqis, especially in the rural areas, still do not report their births and deaths at the exact date.

Fig.8.3 Population Density in the City of Baghdad 1952



outside the Amanat al-Asimah boundaries. Baghdad, then as now, stood out as the primate city and most important urban concentration of the country.

The percentage of growth between 1947 - 1957/^{was 5.19} which almost doubled the population by 1957.* Between 1947 and 1957 the total population of the country increased by 31.5²².

This growth in population has been associated with the development of new suburban areas, which gave Baghdad its modern metropolitan characteristics. A considerable number of residents, particularly the well-to-do, have moved to new suburbs on both sides, actuated by real or imagined advantages of suburban living and by real or imagined changes in the character of the Old Town tradition.²³

During this period Baghdad had 76 mahallahs in Karkh and Rusafah, 22 in the former and 54 in the latter, 8 mahallahs in Adhamiyah and its environs, 4 in Karradah al-Sharqiyah and 7 in Kadhimiyyah and its environs. This put the total number of mahallahs in the city at 95.**

The average population density of the five component portions of Baghdad in 1952 was as follows: (Fig. 8.3)

Locality	Area(in sq. m.)	Person per sq. km.
Rusafah and Karkh	83,000	13280
Adhamiyah and environs	39,000	6240
Kadhimiyyah " "	8,500	1360
Karradah al-Sharqiyah and environs	15,250	2440

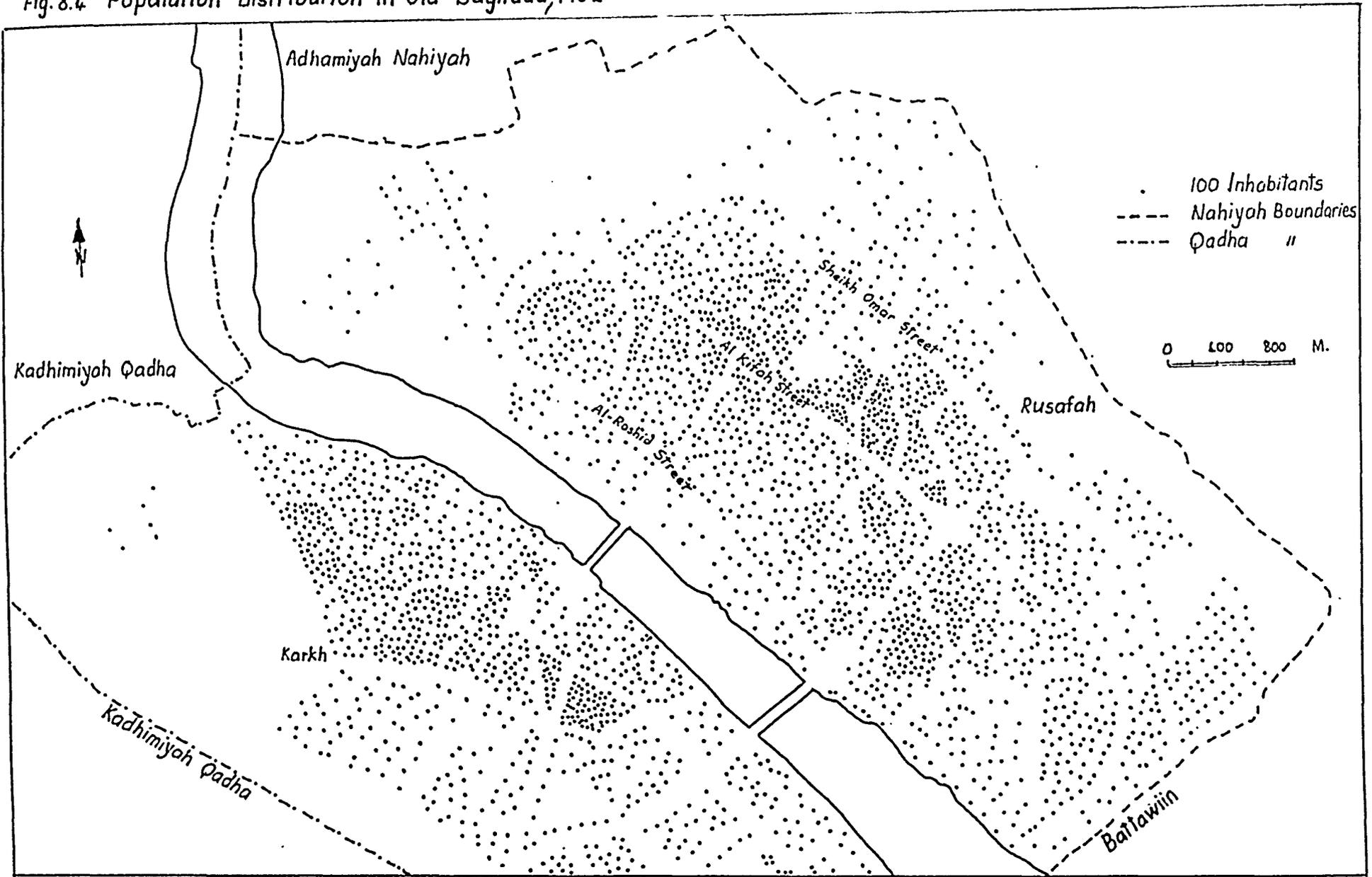
Source: A. Susa, Baghdad Atlas, Baghdad (1952)
pp. 21 - 25.

In 1947 more than 60 per cent of the population lived in Rusafah and Karkh and 28 per cent in the northern and southern suburbs of Baghdad. Thus Rusafah was the most densely inhabited part of the

* Gulic put the growth percentage for the same period at 4.²¹

** T. al-Rawi put them at 120,²⁴

Fig. 8.4 Population Distribution in Old Baghdad, 1952



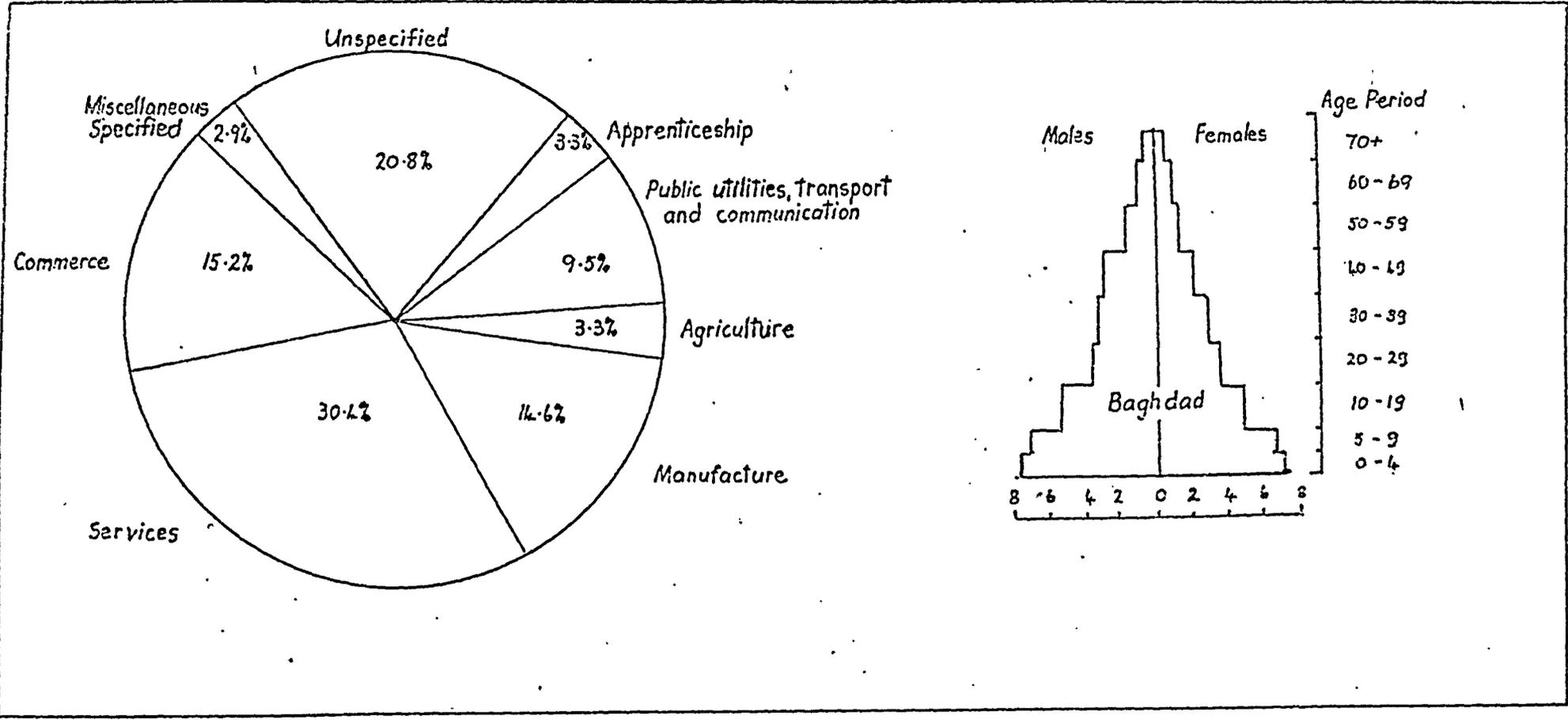
city. Along al-Rashid, al-Kifah and the transverse streets, where various business and government establishments are located, the population density was lower as shown in (Fig. 8.4). Most of these new functions have replaced residential units. Disregarding one mahallah, al-Azzah, with a large area but unusually small population, as it was at the beginning of its development, the average density for Rusafah in 1947 was 120 persons per acre.*

Gulic put the average household size of Baghdad (Karkh and Rusafah) as 9.2 persons, while it was 4.5 persons in Karradat Mariyam, and 7 in Ilwiyah.²⁵ The 1957 Census, the second in the country's history, does not include the number of houses and therefore the average household size for that year cannot be computed. Most of the statistical information was collected on a mahallah growth basis, thus allowing for some reasonable comparisons of the changes in the city's residential structure.

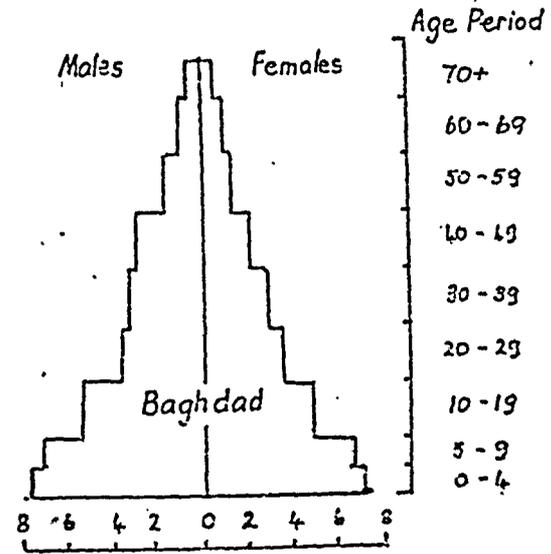
It is to be noted, however, that the densities of mahallahs vary considerably, as do their areas. Hannun al-Saghir mahallah was the densest mahallah with 132 persons per sq. km., while the lowest density occurred in al-Ziwiyah, in Karradah al-Sharqiyah with less than one person per sq. km. The latter, however, was in its incipient development, still maintaining its rural features though some wealthy families had already moved here. Generally the density of Rusafah and Karkh decreased with the distance from the centre. The peripheral mahallahs on both sides were of the lowest population density, being 35 persons/acre, whereas it reached 535 persons/acre in the central mahallah round Kifah Street.²⁶ This may be surprising as the houses

* In 1947 the central part of Rusafah had the highest density with 1,200 persons per acre.

Fig. 8.5 a. Occupational Structure in Baghdad, 1947



b. Population Structure, in 1947



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of this area are exclusively of the traditional courtyard type, one to two storeys high. But it must be remembered that the average household size in Rusafah ranged from 5.2 - 15.2 persons, the average being 9.2 persons. Table 8.5 The Sex Structure of the population of Baghdad Liwa in 1934 and 1947.

	1934			1947		
	Males	Females	Total	Males	Females	Total
Baghdad Liwa	249,460	244,088	493,548	392,754	399,247	792,015
Iraq	1,688,239	1,692,294	3,380,533	2,039,390	2,422,807	4,462,199

Source: Directorate General of Census, Ministry of Interior, the 1947 Census of Iraq, Baghdad (1954).

In 1947, the sex ratio of Baghdad was 1001. From (Table 8.6) below it appears that Baghdad City, the main industrial and administrative centre in the country, had a male population representing 51.7 per cent of the total. In 1956 the male and female percentages were 50.7 and 49.3 respectively.

Table 8.6: Age and Sex Distribution of Baghdad's Population. in 1947. (Fig. 8.5)

Age	Male	Female
0 - 4	7.6	7.3
5 - 9	7.3	6.8
10 - 19	10.2	10.2
20 - 29	7.2	7.2
30 - 39	6.4	5.8
40 - 49	5.8	4.5
50 - 59	3.4	3.0
60 and above	3.4	3.9
Total	51.7	48.7

Source: Directorate General of Census, Ministry of Interior, the 1947 Census, Baghdad (1954).

From this table it can be seen that a large proportion of the population of Baghdad consisted of children. The percentage of age group below 19 years old was 49 per cent of the total population while

the age group between 19 - 39 constitutes 26.3 per cent,^{*} and the age group more than 60 years old is low as it was slightly more than 7 per cent. From the same table it appears also that the majority of the people were in the fertility age (10 - 39 years old). The fair balance between the male and female percentages reflects the fact that migration in Iraq consists of families rather than individuals.

For economic reasons and equally because of the rise in educational standards, polygamy declined considerably. Table 8.7 shows the marital status of the population of Baghdad City and Iraq in 1947, excluding the nomads.

Table (8.7): The Marital Status of the Population of Baghdad City and Iraq (1947).

Locality	Sex	Number and Percentage					
		Unmarried		Married		Widowed, divorced separated, unknown	
		Number	P.C.	Number	P.C.	Number	P.C.
Baghdad	Male	89,105	51.9	78,800	45.9	3,666	2.1
	Female	53,586	33.3	81,786	50.9	25,336	15.8
	both sexes	142,691	42.9	160,586	48.3	29,002	8.7
Iraq	Male	542,502	39.3	801,233	58.0	37,138	2.7
	Female	494,511	30.7	860,846	53.5	254,151	15.8
	Both sexes	1,037,013	34.7	1,662,079	55.6	291,289	9.7

Source: D. Adams Current Population Trends in Iraq, Middle East Journal, 10,2 (1956) pp. 46 - 53.

Traditionally, particularly in the rural areas, men have to pay marriage settlements to the girl's family when they want to marry, accordingly this postponed the age of marriage.

In 1947 Baghdad had 31 per cent of the country's literates and 44 percent of the literate^{**} females, showing the correlation between

* Until recently Iraqis used to under-report males of military age.

** Literate was defined as having the ability to read and write.

literacy and urbanism.

The employment structure of Baghdad in 1947 was as follows:

(Fig. 8.5).

Table 8.8: Employment Structure (excluding nomads) 1947)

	<u>Iraq</u>	<u>Baghdad City</u>
<u>(1) Agriculture</u>		
Total	737,756	4,863
Male	677,579	4,722
Female	60,177	141
Percent of employed population	55.3	3.3
<u>(2) Manufacture</u>		
Total	87,668	21,613
Male	76,803	18,928
Female	10,865	2,685
Percent of employed population	6.6	14.6
<u>(3) Public utilities, transport and communication</u>		
Total	52,974	13,922
Male	52,838	13,918
Female	136	4
Percent of employed population	4.0	9.5
<u>(4) Administration(public and private)</u>		
Total	157,408	44,746
Male	141,646	39,915
Female	15,762	4,831
Percent of employed population	11.8	30.4
<u>(5) Commerce</u>		
Total	137,844	22,332
Male	133,594	21,947
Female	4,249	385
Percent of employed population	10.3	15.2
<u>(6) Miscellaneous</u>		
Total	15,542	4,192
Male	13,803	3,481
Female	1,739	711
Percent of employed population	1.2	2.9

<u>(7) Unspecified</u>		
Total	125,523	30,583
Male	111,726	30,328
Female	7,797	255
Percent of employed population	9.4	20.8
<u>(8) Apprenticeship (under ten years)</u>		
Total	19,022	4,812
Male	18,229	4,674
Female	793	138
Percent of employed population	1.4	3.3
<u>Total employed population</u>		
Total	1,333,737	147,063
Male	1,232,219	137,913
Female	101,518	9,150

Source: Directorate General of Census, Ministry of Interior, the 1947 Census, Baghdad (1954).

Statistics on employment are far from accurate. There are no precise occupational classifications, for instance, a tea seller employed by the airlines would have been reported as employed in transportation. From the above table it appears that the services sector in Baghdad employ the highest percentage of the employed population; industry and commerce come second and third in importance respectively.

Housing Development and Westernization:

Planning Concept in Iraq:

There were no professional planners in Iraq during the period 1936 - 1956. Architects and civil engineers trained abroad returned to 'build' and develop without proper consideration for, or sympathetic awareness of, the local and regional character of Iraqi life in terms of

society, culture and economic situation. Their theoretical and practical approach was on the whole relevant to a very different climatic and social environment and they ignored the inter-relationship between function and form in the specific context of Iraq. Even in Baghdad the College of Engineering there is little study of Arab Architecture. Western design and architectural heritage is studied more than that of Mesopotamia, and this has led to the strange building development which took place in many parts of the city after 1945.

Such things as the social traditions of the society, the privacy of home life, social structure, the need for the ease of pedestrian movement and the unique characteristics of the local urban environment seen in the context of the past historical development should be studied and form the starting point for the planning of the city. Baghdad still has the chance to save a great deal of its architectural heritage and beauty while at the same time allowing development that should be modern without having to damage the former.

The essential regional differences should be considered by the really cultured and sympathetic planner. This is not to be taken as a negative aspect of development.

Baghdad, as did the whole Arab world, began to feel the full impact of western civilization in this period. Economic interests served as the vanguard to more complete political penetration which, although promoting wider intercourse, has created in its turn a new and complex set of problems not experienced by towns of the developed world. One such problem arose when the modern architecture of culturally quite different regions began to be imported after 1936 and appeared in new dwelling units, high-rise buildings and the

street system of the city. There was no attempt to adapt the new models to the physical and social context in which they were placed. In the 1950's Baghdad engaged ^{the} services of no less than eight world famous architects who worked concurrently to 'modernize' Baghdad* But as there was unfortunately no comprehensive guiding plan for Baghdad and they had not enough time to achieve what they came for, the city developed as a hybrid in architecture, losing much of its ancient Arab flavour in the process. Indeed, through the work of western and 'westernized' Iraqi architects, the City of Baghdad came to develop no characteristic architectural physiognomy of its own. Instead a wide range of 'modern' buildings sprang up, alien to the soil and climate in which they were placed. The spontaneous evolution of the city before 1920 was replaced by haphazard personal planning decisions pre-occupied mainly with street development and traffic problems.

For many Iraqi architects, and civil engineers, progress and modernity means westernization. This has led to the ruthless destruction of many forms and patterns that were successfully functioning in the Arab social and cultural context. Therefore a nation-wide environmental education has to be carried out by the municipal and central government institutions to make people aware of the meaning of their civilization and of its advantages and disadvantages.

Craftsmen have also to be recognized as an integral element in the building process through which perhaps a modern architecture, recognizably Arab, can be realized. In private and public building,

* Among them are ^aFrenchman (Le Corbusier) who prepared the design of a stadium, the Spaniard J. L. Sert, two Germans i.e. Walter Gropius, who designed the buildings of the new University, and Werner March who designed the new Museum, the American Frank Lloyd Wright, who designed the proposed opera in Um al-Khanazir Island, the Finn Alvar Aalto who designed the Civic Centre, the Greek G. Doxiadis, who designed most of the housing schemes, and the Italian Gio Ponti²⁷ However, the work of these great architects never got beyond the design stage.

a trinity of architect, craftsman and client should be maintained, and by this collaboration the understanding of the housing problem will probably be achieved. Society and its requirement around which all the developmental processes should evolve must be the goal of the work of this trinity. Because of the present situation in which local engineers are in charge and trained town planners do not exist, Baghdad has had to rely on foreign experts to prepare its first master plans. But these consultants, though technically capable, are not adequately versed in local conditions to advise authoritatively on sound planning policies. Most of the European consultants have only proposed a new road plan associated with limited attempts at land-use zoning. They never tried to start a proper consideration of the local society which is quite different from theirs. The inter-relationship between inherited past, society, function and structure has simply been overlooked.

During the 1950's Baghdad received two master plans. They were carried out piece-meal and selectively depending on the wishes of the municipal officials who were unaware of planning concepts. The plans, however, have been interpreted merely in terms of a prescriptive street and road system with little attempt at any staging of the main building activities in the city.

The first master plan was prepared by an English firm of planning consultants, Minoprio, Spencely and P. W. MacFarlane. Their report was accompanied by a coloured plan to a scale of 1:25,000 and appeared in December 1954 (Cf. Note 14). The authors predicted that the population of Baghdad would be less than 1.5 million over the next fifty years, a figure reached actually within one decade. The other master plan by Doxiadis Associates (cf. Note 15) covered an area of about 500 sq. km,

to accommodate the functions needed to serve 3 million people. However, none of these master plans was ever properly implemented for the simple reason that the Arab⁴ loves property of all kinds, and does not easily sacrifice it for the public and civic weal. He is also accustomed to the corrosive system of 'wastah' or corruption to bring about exceptions to, or relaxation of the law.²⁸

Baghdad does differ from non-Arab cities, particularly in its basic elements. This becomes apparent the more so when consideration moves towards spatial detail of the city such as the house, where fundamental aspects of Arab society are involved in terms of the most personal requirements of the individual and the family. It is one thing to solve broad general problems of a large city like Baghdad, such as the building of a bridge or an airport, by the application of the best international standards in technology, but it^{is}/quite another to introduce alien forms to an essentially socio-cultural aspect such as housing in which social relevance must take precedence of the mere ease of architectural work implicit^{ly} in the unconsidered transfer of foreign form. If civilization is to become universal, its human quality will be enhanced not by blindly repressing regional variations in civilizational heritage but by embracing and developing these in a free synthesis in which universal access to technology will help to raise standards of living, but human diversity over the globe will be one of the essential pre-requisites for an acceptable quality of life. Unfortunately architects, civil engineers and the government in Iraq seemingly believed that there was one international standard of house design. It certainly was one of the reasons behind the over-whelming adoption of 'western' houses after 1945. Thus this particular type

Fig. 8.7



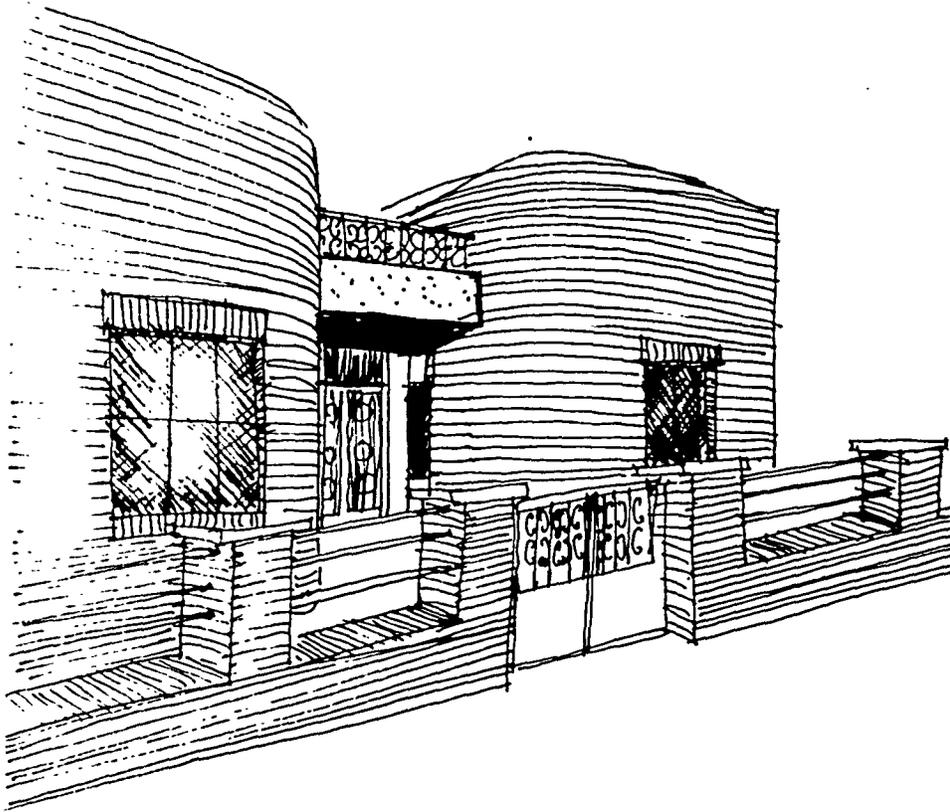
a. Al-Iman al-Adham street in Adhadiyah. The first two houses on the left are covered courtyard houses.



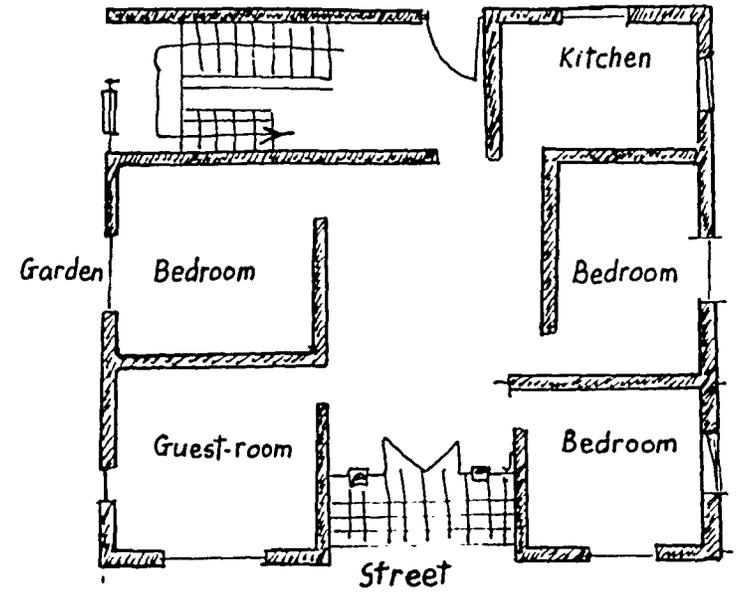
b. A scene in pre-1956 Baghdad. Jamal Abdul Nasir street in Salihiyah. Most of the houses are of the covered courtyard type.

Fig. 8.6 A Covered Courtyard House, 1936-1945

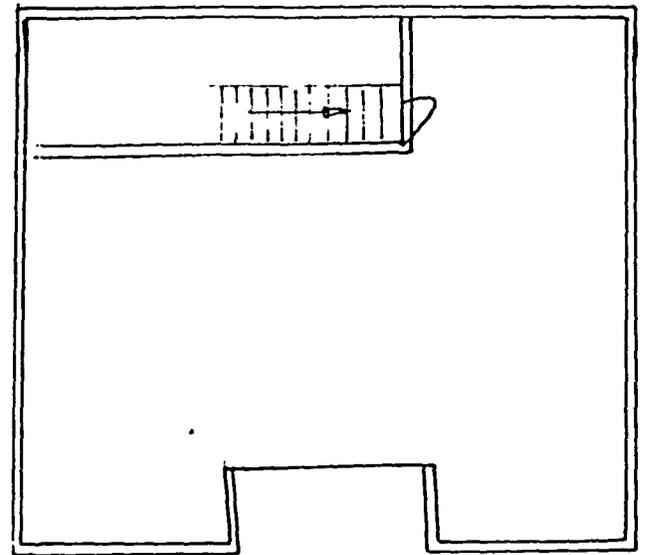
a A Representative Front Elevation



b. Ground-Floor Plan



c. Roof-Plan



has come to dominate the characterless townscape of all new suburbs in an unsatisfactory way. Housing schemes should cater for specific needs of specific society in a specific location, all of these aspects being by nature unique. In dealing with the housing problem basic principles should be considered involving the treatment of housing and settlement planning as four-dimensional projects that have to be conceived, built, maintained and developed as such.

The Covered Courtyard House: (Figs. 8.6, 8.7)

Under the impact of modern technology, transportation and communication, Baghdad, like other cities was affected by the concepts underlying so-called modern architecture.

As a result the houses developed in this period were of two types, the covered courtyard or semi-western house for the sub-period 1936 - 1945 and the western house in its different forms after 1945.

Houses of the first sub-period were built chiefly by the upper classes including the royal family, wazirs, and progressive wealthy people of the three faiths, in the new suburbs such as Waziriyah, Iwadhayah, Adhamiyah, Sadun, Abu-Nuwas and Karradah al-Sharqiyah on the East Side, and in Karkh between the British Embassy and Karradat Mariyam and along Jamal Abul Nassir Street, also in Kadhimiyah to a limited extent, mainly to the south and west of the then built-up area (Fig. 8.1) They were surrounded by gardens which were usually surrounded by eye-level walls to secure privacy. These houses intermingled with vacant land along the occasionally wide, tree lined boulevards. Most of the streets of this period, particularly in the suburbs gave no shelter from the sun. Thus they are not used by pedestrians before the late afternoon compared with the shaded and cool zuqaqs usable throughout the

the day.

The infilling of vacant plots occurred gradually, and not necessarily with the same type of house.

As the wealthy families have forsaken Old Baghdad, their former traditional houses became either business premises or tenements occupied by poorer families. Most of these courtyard houses became subject to residential multi-occupation. Each building housing several families, often relatives. This, together with the absence of a sewage system or any organized system of garbage disposal has contributed to the semi-slum conditions beginning to affect the centre of the city. Thus, the new houses of this period came to symbolise the high economic status of their occupants, while the traditional houses of the Old Town have become associated with the low economic status of their new inhabitants.

The covered court-yard house is characterised by a highly ornamented facade, with highly decorated balconies, entrances and windows. Most houses of this type are of one or two, and occasionally three storeys. They are not very compact as they stand on plots ranging between 200 - 1,000 sq. m, or even larger, the building density being 30 - 80 dwellings per hectare. They occur in an area within 6 to 8 km of the commercial centre and are at present in fair to very good structural condition. The areas dominated by these houses have a large percentage of open spaces, chiefly palmgroves, and are mostly served by local sewage systems.

Apart from the facades intensive decoration inspired western precepts these houses still catered for the specifically Arab social requirements of their occupants in their interior design. Owing to an ordinance issued by the Mayor of the Capital (Amin al-Asimah) in 1936, the traditional courtyard was abandoned. An area 4 m wide on

each side of the house had to be left unbuilt and this made it too difficult to build a court-yard, especially on the plots of the second sub-period with an average size of 20 x 30 m.

Consequently, the hall or covered court (sahah) was introduced as the alternative to the former open courtyard and assumed the same role. Thus the courtyard conception was completely abandoned in the design of houses in Arab urban centres after 1945, at a time when advanced societies were just beginning to recognise its possibilities for residential buildings. The significance of the characteristics of the Arab house in their local social context were not realized when the traditional type was replaced by a new one. The court-yard, now covered, became the gathering place for family members, When guests are welcomed they usually use the guest room which is generally on one side of the entrance. The guest room is also connected with the covered yard which occupies a central site. From this central quarter communication with other rooms is maintained, including the staircase leading to the first floor, containing the bed rooms. Guests sometimes sit in the highly decorated covered yard. Light is secured by windows facing either the back garden or the street. The adoption of this 'covered yard' plan in turn has had an important influence on the overall form of the urban fabric. The influence of changes in legislation was emphasised further by the impact of the motor vehicle which was the main reason for the development of wide straight and new boulevards connecting the new suburbs with the Old Town. The law permitted the building of side garages, and these have developed into mushtamals, i.e. small two or three roomed single- or two-storey houses for the occupation of servants, gardeners or garages. It is a common feature associated with the

Fig. 8.8B Two examples of the western houses, developed after 1945 in al-Nidhal street

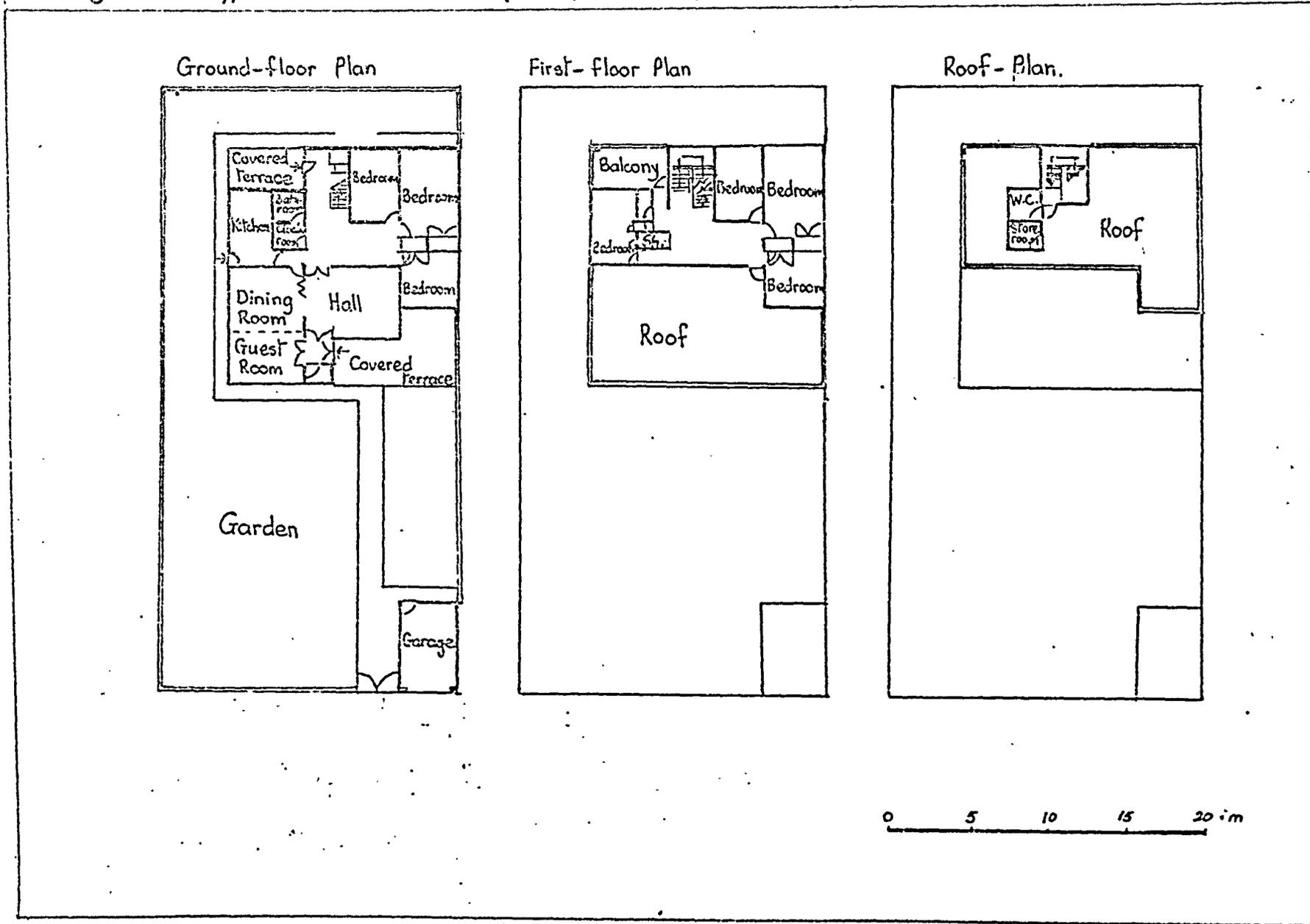


a.



b.

Fig.8.8 A Typical Private Western (closed) House (After H al-Azzawi)



F-03

covered courtyard houses of this sub-period (1936 - 1945). Now mushtamals are mainly rented by lower middle and poor class families. The original owners of the properties left early in the second sub-period to go to new and better peripheral localities such as al-Masbah and al-Mansur.

Further accretions gradually advanced from the Old Town towards the new suburbs causing the formation of continuous built-up areas in Iwadhiyah, Waziriyah and al-Rusafah on the East Side. Accretions developed also towards Adhamiyah and Karradah al-Sharqiyah in the south without yet effecting complete connection of built-up areas.

A,
B,

The Western House: (Figs. 8. & 9).

After 1945 western influences on social life, economic development and consequent form evolution increased. Along with this, land subdivision began to take place on a larger scale and has continued to be a main feature in the modern development of the city. Together with the development of transportation this paved the way for the introduction of the western house in its various styles. This type is the only one to be adopted in Baghdad and other Iraqi towns since 1945.

The western house with its common hall element is entirely different from the traditional courtyard house. In a sense it represents the culmination of the house development, supported by an improvement in the standard of living and in technological developments in building and communication. However, social development in Baghdad was too far behind the stage represented by such houses. In the home women generally continued to avoid any contact with men who were not closely related to them by blood or marriage, though in public both women and men did begin to attend many institutions together.²⁹

Nevertheless, western cliché's were copied from geographically and culturally very different regions, and there was no attempt to assimilate principles of western forms by adapting them to local Arab needs.* As in the past, people did not actively influence the design of their domestic dwellings and failed even to voice their requirements which were therefore disregarded by foreign-trained architects and by the authorities concerned.

Wholesale adoption of the 'closed-plan' type of houses meant disregard of the main social, religious, spiritual and climatic parameters of pre-1936 houses. This change in architecture accompanied the importation of many other cultural traits from outside the Arab world with unexpected results. Thus the surrounding garden of the new house increased the amount of the building surface directly subjected to insolation and at the same time exposed to observation by passers-by and neighbours, often resulting in personal disputes. Also, these gardens can be used for relaxation and recreation only in the late afternoon and during the short transitional seasons. Accordingly, all domestic activities have to take place indoors. The effect of the sun, furthermore, was increased by providing the house with large, climatically inappropriate windows, which incidentally further decreased privacy and the security from burglars. Because of the hot, dry and sometimes dusty or sandy air windows are closed almost all day. Thus mechanical cooling systems have to be provided which, because of their high running costs, can usually be afforded only by well-to-do families.

Poorer families have to resort to the old way of cooling by covering the windows with camelthorn which is periodically moistened thereby causing the air to be cooled as it enters the house. Usually air coolers are placed in front of the main hall window, reducing day-

* The disregard of socio-climatic needs can unfortunately be observed in many other countries in Asia and Africa.

light inside and disfiguring the elevation of the house by their ugly appearance.

To reduce the effect of heat absorption the roofs of most houses in Baghdad are washed with water, often twice a week. Walls also are painted white or in some other light colour.³⁰

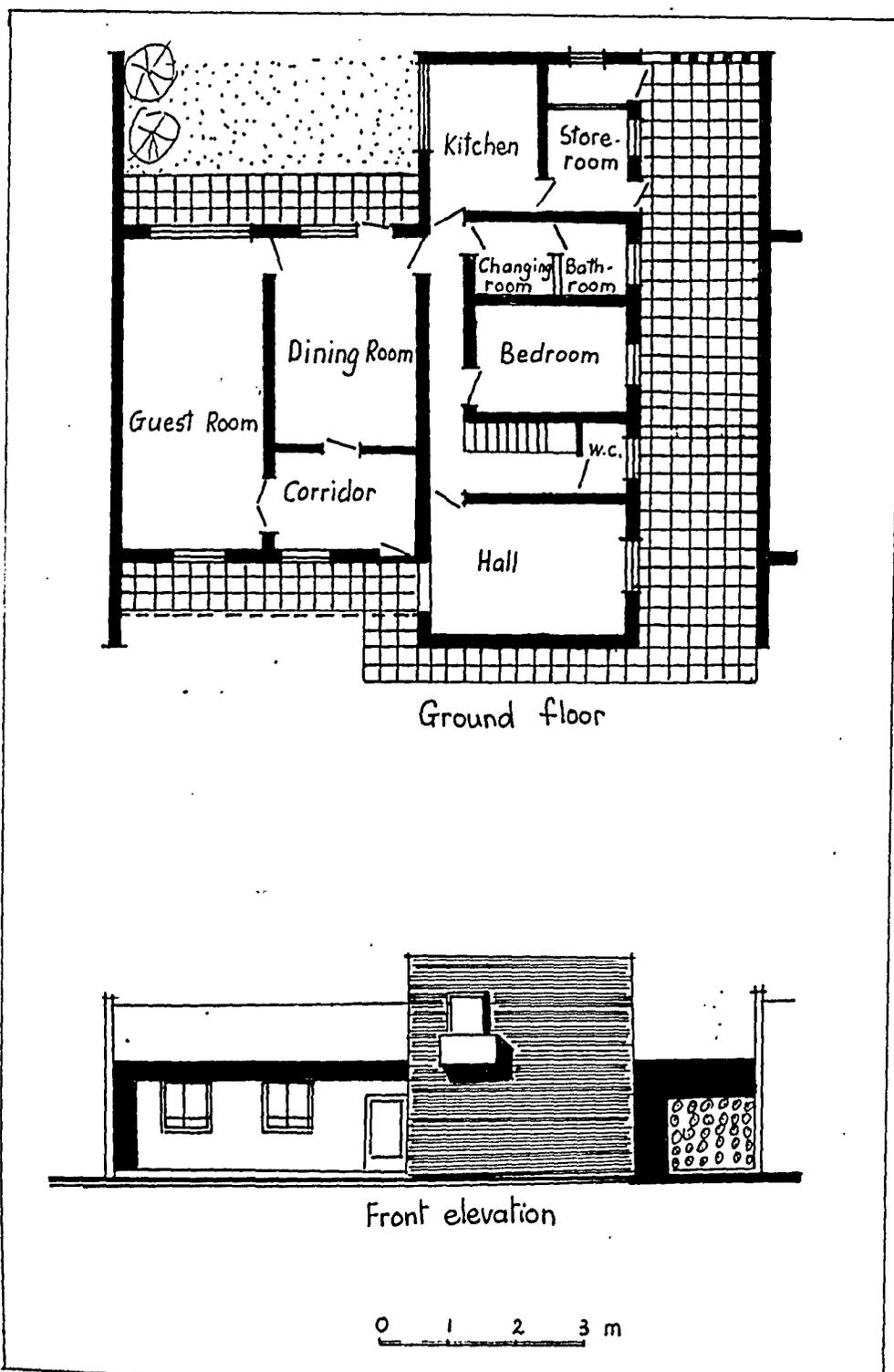
Concrete and aluminium louvres were used along the facades of the western house to reduce glare. Indeed, these innovations act as "external heaters" since they are thin and transmit a large amount of heat to the interior.

The hall, necessary in the European houses simply as a central communication space as the requirement of social life there are quite different, has been introduced as the main functional and plan element in the new houses. It takes up most of the ground floor, and is linked with the other rooms. It is the vestigial feature left from the open courtyard arrangement of the traditional Arab house. An opening from this hall leads into communicating rooms, and access for other rooms can be gained from this family living room. Relatives of the family are welcomed in this room while strangers use the rather separate guest-room linked with the dining room.

In this period the social life of individuals expanded, yet without losing its traditional Arab complexion entirely. Thus a dual-purpose sitting/dining room was developed in this type of house. The new houses contain rooms with clearly defined functions in contrast to those in the traditional house.

The number of bedrooms in the house depends on the socio-economic structure of the family, but usually one or two bed-rooms and one to three bed-rooms are to be found on the ground and first floor respectively in middle-class houses.

Fig. 8.9 A Plan of an Army Co-operative House



The ground floor area of the house is not entirely covered by the first floor structure. In such houses the roof of the first floor is used by the males of the family or visiting relations. The parents' bedroom is traditionally not entered by other members of the family unless it is necessary. When the family's income increases perhaps more first-floor rooms are built to the limits of the block-plan of the house, or in rare cases even half a third floor may be added.

In its different variations this house type exclusively dominated the residential areas emerging after 1945. The two types of modern houses representing the two sub-periods before and after World War II are mainly built of bricks, though concrete began to be used after 1945, especially in houses built by the government (Figs. 8.8, 8.9)

Governmental housing projects were executed by foreign firms who tried to obtain excessive profit. Individual variation has been reduced in the western houses. For instance, most of the rooms have to be built adjacent to external walls in order to receive day-light and give visual relief to the occupants, but this results in their exposure to excessive insolation. Thus inconvenience in the use of the rooms has increased, making their external views disagreeable because of intense brightness.

The walls are mostly of bricks and mortar. Internally they are usually plastered with juss mortar. Commonly, ceilings are constructed with slightly curved or jack-arches of narrow span with bricks or concrete blocks resting on parallel metal beams. In the case of the roofs, the arches are covered with a layer of insulating material of clay or other heat-proof material which forms the floor of the roof terrace. Insulation against dampness is usually obtained by means of a layer of asphalt or similar material placed between the earth and the

clay, and having a suitable slope with corresponding outlets or rain pipes. This method of roofing is used in relatively better houses; the poorer houses have covered wooden beams, on which mats and a layer of clay are placed. In the better houses the floor of the roof terrace is laid with tiles of local manufacture.

Metal frames for doors and windows, locally produced from imported sectioned steel, are customary in this and the following period. Only the window-pane frames are always of metal the main window frames are generally either of wood or of metal. Wooden doors and windows are also common, though timber is fairly expensive and skilled joiners are scarce. A small proportion of windows are provided with wooden shutters. Fly nets and protective steel bars are usually added to windows.

Housing Policy:

Because of the natural population increase and the enormous influx of migrants and several other factors, Baghdad faced an unprecedented housing problem. This was aggravated by the fact that the period witnessed a changing notion of the family unit on the part of Arab urban society. Thus the country entered a new era of transition from the old patriarchal joint family to the single natural family unit. This means that instead of one house for several single families living as a joint unit there is now a demand for a greater number of houses for the same number of persons.

Thus the cost of houses has risen considerably, all the more so as the market was not prepared to meet the sudden increase in the demand for building materials, especially after the restrictions against importation, and local contractors were unprepared to meet the situation financially and technically.

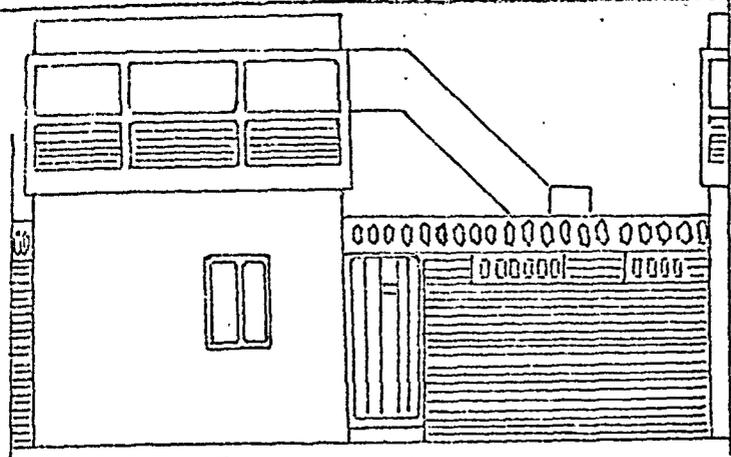
Nevertheless, in a short time the speed of housing development led to the spectacular horizontal sprawl of the city, accelerated by the increasing use of cars and buses, the new and more flexible means of local transportation. Indeed, the chronology of transportation innovation affected the timing of the residential booms in the city, while overall increase of the built-up area was further boosted, by the rural-to-urban migration.

Only after the establishment of the Development Board in 1950 with responsibility for the implementation of housing programmes in the country, the government seriously contributed to residential development.

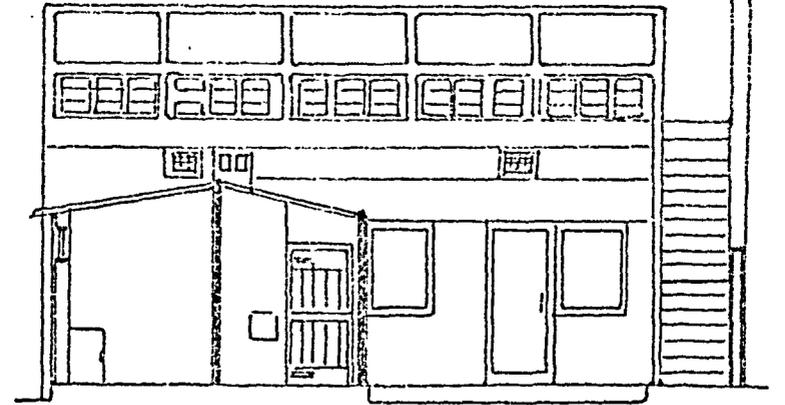
No housing programme, however, could be developed and carried out without appropriate ownership of land. Then, as now, the situation in the Baghdad region as well as the country as a whole was much more favourable to government than in most countries of the world. It gives the opportunity to the government to use large tracts of land for the development of its own schemes. Since 1955, legislation allows for the division of big tracts of unexploited land in the urban areas between government and people who are using this land on a 50 - 50 per cent or 25 - 75 per cent basis. These tracts of land could really become the key element in any properly supervised growth and the solution of the housing problem in all urban areas. The authorities have not only ignored this opportunity for development but have in fact promoted land speculation which is still taking place in different ways.

All the housing schemes were projected and implemented in terms of personal decisions. As in the case at present, occupants had no say whatsoever in such crucial decisions affecting their future.

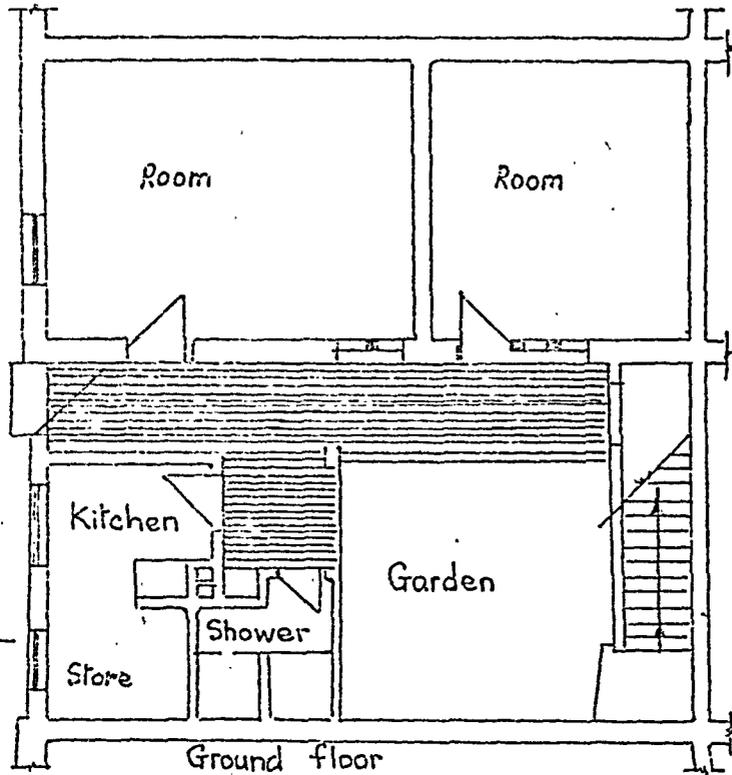
Fig. 8.11 A Sample House from the Baghdad West Estate



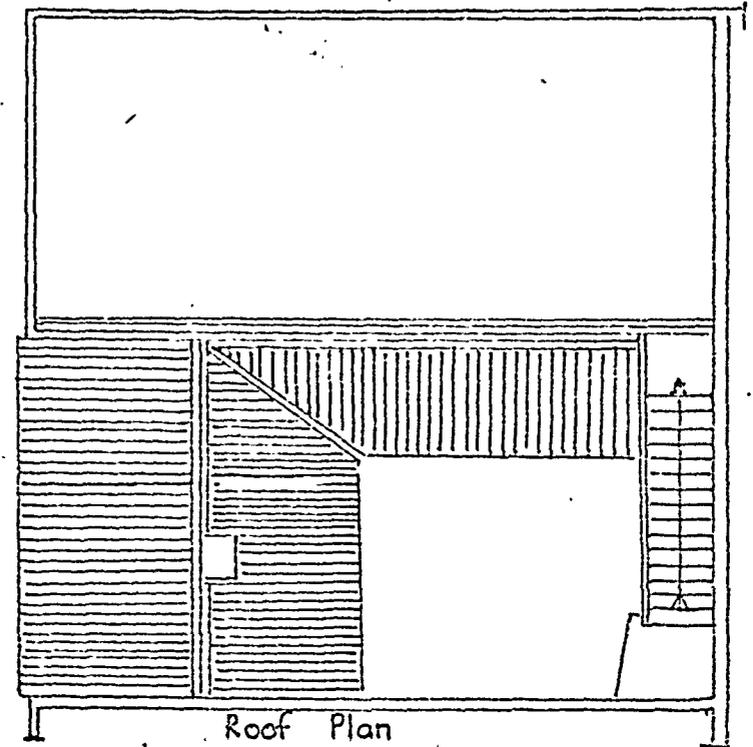
Front elevation



Section AA



Ground floor



Roof Plan

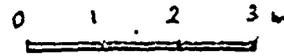
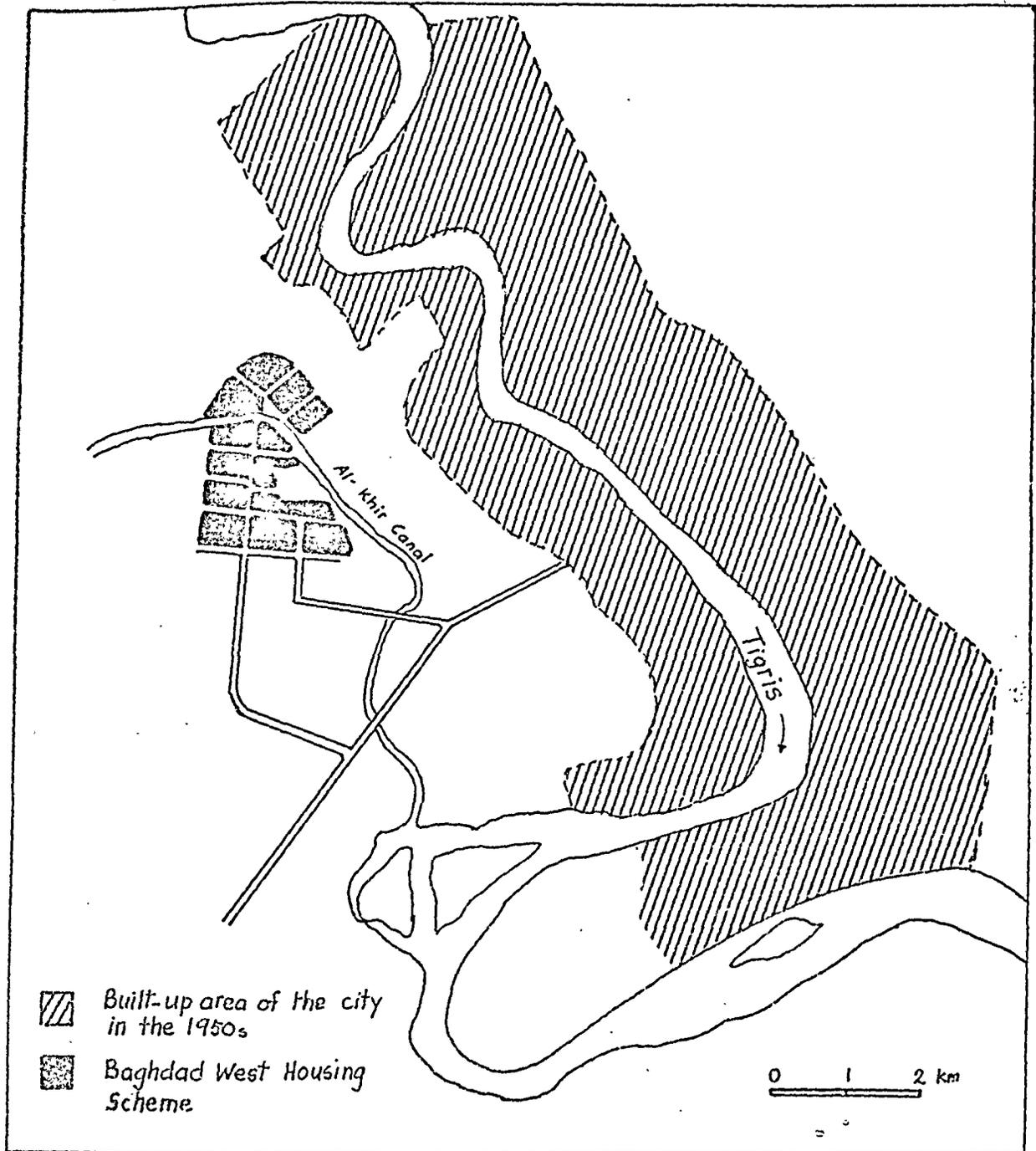


Fig. 8.10. Baghdad West (Al-Iskan) Housing Scheme



As poor people are not able financially of solving their housing problems in the free market, the government theoretically gave their housing problem priority. Several housing schemes were implemented by the government during this period, the first and typical government implemented scheme being al-Washash on the Khir River to be known as Baghdad-West Scheme and al-Iskan³¹ (Fig. 8.10,8.11).

From the 1950's onward housing policies in Iraq have been carried out by several bodies such as different ministries, governmental departments, banks, municipalities, semi-official organizations, co-operative housing societies and individuals. Consequently, investments have been diffused. A central Housing Board for Baghdad as the only body to carry out this colossal task is worth suggesting. The need for such a proposal will be better understood if the numerous disadvantages of the existing position are kept in mind. There is no comprehension of any rational spatial distribution of urban land uses. When implementing these schemes the functional relationships of proposed residential areas to the central area, to relevant places of work and associated transportation problem were ignored.

Next, there has been no consideration at all of many relevant phasing in town planning.

Further, there is no justice in the distribution of funds and no overall programme guaranteeing an equal type of service for the same group of people.

Neither is there any co-ordination of activities at the physical level. Thus there are schemes in Baghdad conceived by different authorities and forming, as they should, an integrated new community, but being spread throughout the city or, if they are contiguous not forming any co-ordinated plan.

There is also no economy at all in planning new projects. All the different agencies keep their own inferior design services as they cannot afford to hire competent groups for small projects, and so the level of accomplishment is low and projects remain expensive.

There is no co-ordination at all in phasing construction, thus one project works against another, resulting in higher prices and a haphazard pattern of expansion.

There is no co-ordination at all of supervision. As there are many agencies in charge of these schemes there are many supervising engineers.

In some cases in Baghdad one has seen four schemes under way at the same time and in the same locality with different plans, different specifications and the need for four separate groups of supervisors.

Consequently, Baghdad is entirely different from western towns in its modern morphological development. The situation has been aggravated by a complete lack of urban policies, which has brought further difficulties for the development of private building activities. Many people want and are able to build but cannot find land in suitable location and at reasonable prices.

The government's methods of solving the housing problem in Iraq are (1) the direct method of building houses such as the Baghdad West Scheme and Tel Muhammad in this period, and many others in the following period (2) the indirect methods of lending money for house purchase, for buying land, or for building houses, of purchasing and selling of building materials and of organizing communities to assist housing co-operatives.

Of these methods the direct one has proved to be the slowest and most expensive.

The Arab's desire to own his own house is so strong that the home renting scheme is far from successful. The indirect method offers a wide variety of ways bringing in the efforts of the people themselves in both the financial and the physical sense.

In the period under discussion the Development Board and the Ministry of Development have been mainly concerned with housing projects on the large scale.

In the post-war years, the Ministry of Social Affairs has also been in charge of several housing schemes. It implemented two schemes in Baghdad, one executed by a foreign contractor for concrete housing in Topchi and a minor one to the north of that. The first contract provided 1,000 houses, while the second added a few hundred. In addition, the Ministry of Public Works carried out several housing schemes for high government officials.

To a limited extent Amanat al-Asimah also acted in the field of housing and settlements within its own area. It is in fact carrying out the scheme of master plan of Baghdad as well as several schemes for community facilities, especially the road programme.

The Mortgage Bank of Iraq, established during the period finances the building of houses by loans. It is also instituting housing schemes by acquiring big tracts of land as well as by building houses for sale.

The best example of a government housing scheme planned in this period is Baghdad West (Fig. 8.10) twenty minutes by car from the commercial centre, and executed by foreign contract under the supervision of the Development Board. The implementation of this scheme has furthered the westward growth of the city.

In 1956, the Doctors' and Pharmacists' Housing Scheme was decided to be within the scheme of Baghdad West. Provision for schools and other community building was included, though it has not yet been completed, as also for open spaces and recreation grounds. The whole scheme cost 2 million I.D.

A considerable number of houses built were distributed to different housing co-operatives such as the Engineers' Housing Society, the Iraqi Airways Housing Society, the Higher Institutes Housing Society, etc.

Communities accommodating families of lower incomes are placed in the northern areas of the locality, whereas the income level increases as one proceeds southwards, to the area of al-Mansur Estate where the highest income groups are located. The lands in the south are privately owned whilst it is governmental in the north.

The gradual southward increase of income levels is associated with a gradual increase in plot sizes, reaching an area of 600 - 1200 m² or even 2,000 m² each in al-Mansur Estate. Plot sizes of houses included in the field survey range from an average of 146.6 sq. m in al-Iskan to an average of 1248.5 sq. m in al-Mansur.

As income groups become higher from north to south, vehicular roads increase in number and design in the same direction. Thus pedestrian roads predominate in the north with very few vehicular roads extending as far as the key point of each community, while in most southern communities the majority of plots can be reached by car on vehicular roads.

All the interviewed families in al-Mansur had cars, while none of the interviewed in al-Iskan owned a car.

The number of houses in this sector was 1,154, varying in size from 81 sq. m. to 144 sq. m. In the 'block plan' the size of the houses varies between 68.6 sq. m. and 108.8 sq. m. 41 houses were of two storeys, of which the built-up area was 173,6 sq. m. Their costs vary from between 685 and 689 to between 1096 and 1308 I.D. each.³²

Though in principle houses should be distributed according to family incomes which range from 10 to 100 dinars monthly, occupants buying these houses were actually selected by lot. There were no 'down' payments and monthly remittances were almost equal to rental rate.

Each house has its own small internal garden. The main building materials for walls are bricks and mortar juss or cement. Flooring is of cement, doors and windows are of timber. Roofs have bitumen water-proofing and a coat dressing of asphalt. Concrete is used in some of the houses for roofing and stairs. Each house is provided with a flush cistern; toilets are of eastern style. The bathroom is roofed with corrugated galvanized iron sheeting.

Owing to natural population increase most of these houses have become overcrowded and have therefore began to deteriorate.

Co-operative Housing Societies:

Co-operative housing societies have played a paramount part in the recent expansion of the city. Not only the physiognomy, but the social structure of the city was been much influenced by these societies. This has resulted in a new spatial adjustment of residential and other land uses.

Though they are supposedly developed to serve the existing Arab Society of Baghdad yet they were and still are imposing new western residential models incapable of meeting traditional social needs of life.

The co-operative movement in the country was established according to the Act No. 22 of 1922, in order to organise the efforts of labourers, the limited income earners and farmers to improve their economic and social conditions. The major kinds of co-operative societies are: consumer co-operative societies providing members with their daily needs at convenient prices, agricultural and credit co-operative societies, lend money at a low rate of interest to their members to be used for agricultural and livestock production and housing co-operative societies through which families can acquire houses built to their own design and pay for them in monthly or annual instalments. Some of these societies provide their members with new houses.

Before the Second World War a few societies had emerged but then disappeared as they failed to fulfil their programmes. In 1944, a new Act No. 27, was issued replacing the former one. The number of all kinds of co-operative societies in the country became 25 in 1952, more than half of them operating in Baghdad. The membership of Baghdad's societies ran to more than 2,000. In 1958 the number of co-operatives rose to 58 most of which were housing societies.

To develop and encourage these societies a new law was enacted No. 73, in 1959, by which a Directorate General of Co-operation was established, later transferred from the Ministry of Economics to the Ministry of Work and Social Affairs. In 1959 the Co-operative Bank, established in 1956 and encouraged by the government, gave long-term loans to societies. Housing co-operative societies thus increased in number. They all participated in housing schemes or the acquisition of land on which to build houses. They played^a/considerable part in the explosion phase of Baghdad after 1956. Even at the present time many

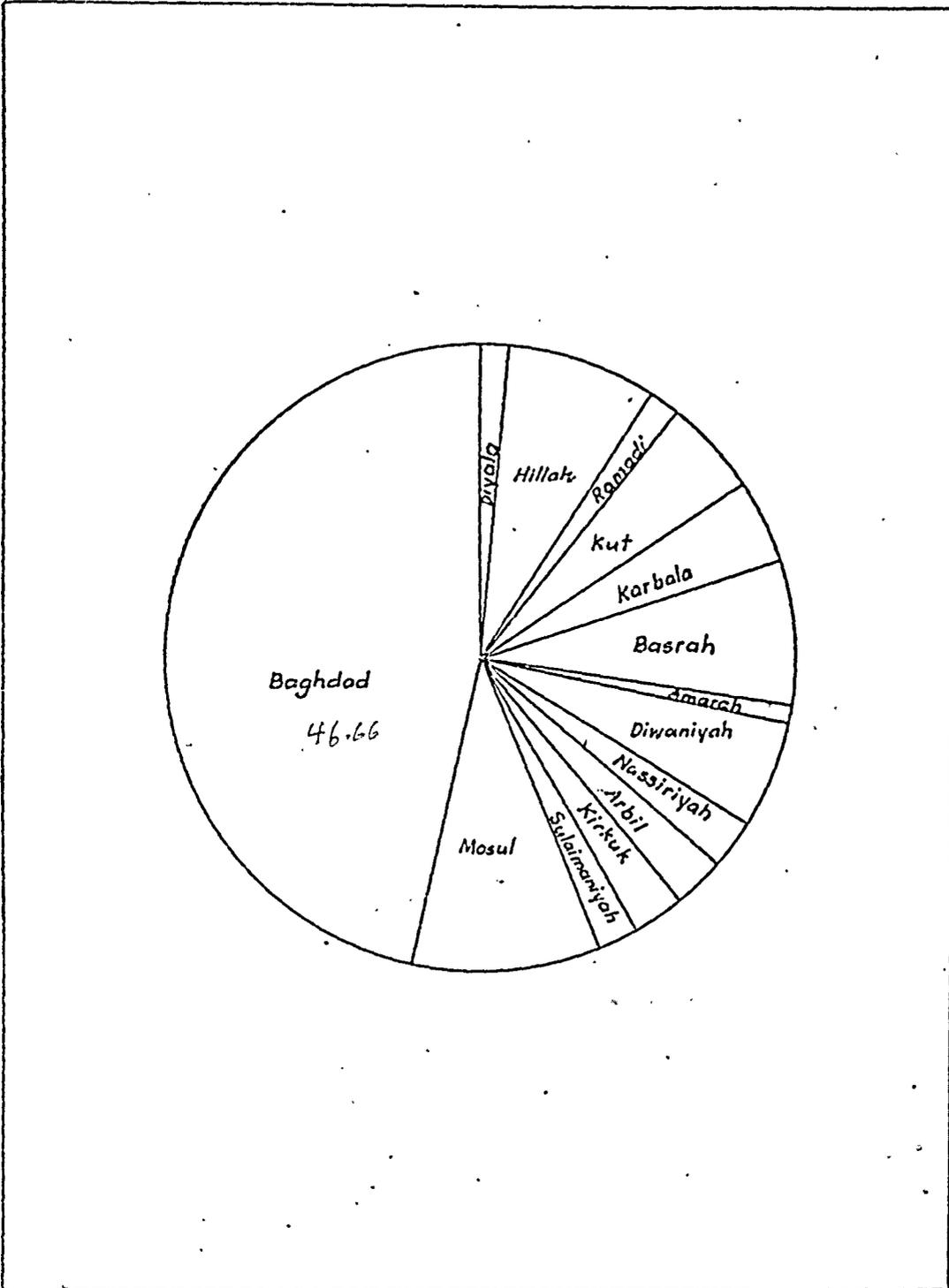
of them hold tracts of land not yet developed, stretching around Baghdad. The members of these societies consist of professional people who are employees of the State including teachers, lawyers, doctors, police and army officers, university staff, pharmacists and members of certain agencies and ministries. Each site is named after the society concerned. The site is called Madinah (city) or Hai (district). Accordingly there are for instance Madinat al-Ummal (City of Workers), Madinat al-Attibba (City of Doctors), Madinat al-Muhandisin (City of Engineers) etc.

When distributing the blocks of land to either directly the societies or to the ministries which in turn redistribute them to the societies concerned, the government provided the technical services for parcellation free of charge. Co-operative societies supplied individual members with parcels by lottery under the supervision of the Ministry of Public Works and Housing. A member of such societies usually pays 110 I.D., i.e. 60 I.D. for land and 50 I.D. for the cost of survey, ownership transaction etc. Selling of the land as such is not allowed although it is legal to sell it with the house built on it after a certain period. Theoretically, the beneficiary should start building within five years after distribution.

Water and electricity are supplied immediately but time lags are usual in providing telephone connections, sewers and paved roads. Beneficiaries pay for these services and pavement rates are determined by the length of road frontage per house.³³

The number of professional-group housing societies in Baghdad was reported as 120 in 1965, 90 of them holding state-owned land. The land often costs as little as 50 fils (5 pence) per sq. m but can range up to 500 fils (50 pence). In 1967 the number of co-

Fig.8.12 Number of Co-operative Housing Societies by Liwas



operative housing societies reached 160.³⁴ In 1969 the number of housing societies in the country jumped to 405, 189 of which were in Baghdad Liwa (Fig. 10.12). It increased further in 1970* to 440, out of which Baghdad maintained its previous number. The average membership of these societies range from less than 1,000 to more than 10,000 each.

The total number of members was 283,000 in 1970, and the total capital of all societies 500,000 I.D. During the period 1944 - 1970, 150,000 plots of land were distributed and 3,000 houses were built by these societies throughout the country.³⁵

In Baghdad, societies up to 1967 distributed 43,051 plots which until then were not built-up, while the number of plots distributed by them and built upon was 28,858.³⁶

Through these co-operative societies the government has created a new problem of social discrimination, as prospective house owners are segregated according to their profession, i.e. by income levels. Each locality gathers the same kind of government employees and this in turn has negative social consequences as it is not a naturally developing society.

The social, economic and morphological problems associated with the development of governmental housing projects needs detailed social, geographical and town planning investigations, the findings of which will be very interesting as they will reflect the costly consequences of ill-considered decisions relating to a large sector of society.

In the absence of any comprehensive plan, co-operative housing societies have created featurless monotonous suburbs, Unhappily these developments are a peculiarity of Baghdad's modern growth repeated

in many other Iraqi towns. Although the state approves the house design of members, community facilities such as schools, medical facilities, parks, public transport, refuse collection, fire and police stations are not proportionally provided and often far from adequate.

Housing Structure:

In 1947 the average household size in Baghdad ranged from 11 persons in the central mahallahs to 5 persons in the mahallah near Bab al-Sharji (Table 8.9). There were four categories of residences according to the 1947 Census. Their percentage distribution in Baghdad City and Baghdad Liwa is shown below.

Table 8.9: Type of Residence and Size of Family 1947.

	Percent living in -				Average size of family living in			
	single family houses	multi-family houses	huts, tents	other	single family houses	Multi-family houses		
						families per house	Size of family	Huts Tent
Baghdad City	30.1	52.1	12.6	5.2	6.0	2.3	4.9	5.2
Baghdad Liwa	27.6	35.3	32.9	4.2	5.8	2.6	4.8	5.4

Source: D. G. Adams, Current Population, Trends in Iraq, Middle Eastern Journal 10,2 (1956) 56.

Single family houses of permanent structure and of mud brick have been combined because enumerators were unable to distinguish between them. Multi-family dwellings correspond to tenements. The third category includes sarifahs, kukhs and tents. The fourth category includes all other forms of dwelling, primarily those in institutional buildings of the government.

Tenements are concentrated in the central area, where the original owners of a considerable number of large houses had left the district for suburban areas, that contained the highest proportion of single family* houses.

When a house has to be shared as a result of the pressure of urbanization, relatives are preferred. This has been observed even at present in the houses covered by the field survey.

Table 8.10: Type of Residence in Baghdad City 1947.

Area	Population	%	Single family houses	%	Multi-family houses	%	Huts	%	Other	%
Old City	352,137	100	85,064	24.2	209,974	59.6	35,966	10.2	21,133	6.0
Urban Adhamiyah	58,697	100	33,190	56.5	12,803	21.8	11,594	19.8	1,110	1.9
Urban Karradah	55,949	100	22,140	39.6	20,529	36.7	11,094	19.8	2,186	3.9
Baghdad	466,783	100	140,394	30.1	243,306	52.1	58,654	12.6	24,429	5.2

Source: D. G. Adams, Current Population Trends in Iraq, Middle Eastern Journal, 10, 2 (1956) 58.

The above table shows that the majority of people were living in multi-family houses especially in the old sections of the city.

More than 12 per cent of the population were living in huts, chiefly migrants from the rural areas. Although they lived in miserable conditions, their standard of living was higher than when they lived in the rural south. Baghdad thus had an acute and growing housing problem. The migration influx, the main reason, aggravated this problem in the following years.

* Family was defined as a group of people related by blood and living together.

On the basis of the 1956 Housing Census of Iraq, the housing status of the city by the end of this period can be reviewed.

Excluding small villages of less than 15 houses each there were 128,078 houses in Baghdad Liwa of which 98,019 were located in Greater Baghdad.* The proportion of sarifahs and kukhs was lower outside Greater Baghdad, housing 730,549 population. 49,725 and 53,705 were provided with electricity and piped water respectively. About 50 per cent of the houses were built of bricks, stones not being available on Baghdad's fluvial site. The number of stone houses was just 41. Stones were usually brought from Ramadi Liwa.

* Greater Baghdad was considered as:

1. Baghdad City: a. Rusafah, b. Karkh, c. Sarifah areas on the two 'sides'.
2. Kadhimiyah: a. Kadhimiyah Town, b. Baijiyat al-Washash, c. Washash Village, d. Tajiyat Agerguf, e. other villages belonging to Kadhimiyah.
3. Al-Durah: a. Karradat Mariyam, b. Shakriyah, c. Harthiyah, d. Sarifah areas, e. other villages within the area.
4. Karraddah al-Sharqiyah: a. centre of Karradah al-Sharqiyah, b. Sarifah of Karradah al-Sharqiyah, c. Baghdad al-Jadidah - Tel Muhammad, d. Zufuraniyah, e. Shammaiyah, f. other villages in the area.
5. Al-Adhamiyah: a. the centre of Adhamiyah, b. village near the brick works, d. other villages in the area.

Table 8.11: Housing details in Baghdad area recorded in sub-divisions (Fig.8.13)

Locality	Total No. of Houses	Total No. of Rooms	Total No. of People	Average rent I.D.	No. of houses with electric power	No. of houses with piped water
Rusafah	19,141	65,692	184,011	9,900	16,531	17,060
Karkh	11,103	33,575	99,367	6,900	8,962	9,591
Sarifah (on both sides)	1,235	1,235	6,804	1,100	10	71
Kadhimiya town	7,823	23,979	61,476	5,800	4,824	5,483
Villages surrounding Kadhimiya	2,467	5,959	14,149	-	101	181
Bajiyat al Washash	2,058	2,706	13,531	600	-	-
Washash Village	1,555	3,888	11,729	4,600	1,179	1,300
Tajiyat Agerguf	1,110	1,378	5,229	-	1	-
Karradat Mariyam	1,689	4,794	11,305	6,900	916	919
Shakriyah	3,324	6,594	27,779	400	2	3
Harthiyah	630	1,306	3,759	5,800	80	147
Sarifah area	497	502	2,735	1,000	2	51
Villages surrounding Durah	2,994	6,926	16,881	-	42	39
Karradah al Sharqiyah Nohiyah Centre	12,118	42,122	79,234	16,200	8,176	8,530
Sarifah colonies in Karradah al Sharqiyah	5,744	5,744	31,550	1,000	11	45
Baghdad al-Jadidah and Tel Muhammad	2,717	4,598	16,981	3,000	637	1,025
Zufuraniyah	696	1,114	4,061	2,300	52	54
Shamaiyah	1,050	1,299	5,406	1,000	3	4
Villages belonging to Karradah al Sharqiyah	1,287	2,401	7,992	-	39	42
Adhamiyah Centre	16,422	44,821	112,418	8,369	8,144	9,069
Villages surrounding Brick Works	494	514	2,600	-	2	-
Villages belonging to Adhamiyah	1,865	5,198	11,552	-	11	19
TOTAL	98,019	266,345	730,549	8,268	49,725	53,705
Tents						
Kadhimiya	17	17	100	-	-	-
Karradah al Sharqiyah	9	9	74	-	-	-
Durah	33	34	183	-	-	-
Adhamiyah	26	26	183	-	-	-
TOTAL	85	86	540	-	-	-
GENERAL TOTAL	98,189	266,517	731,629	8,268	49,725	53,705

Cont'd ...

Table 8.11 Continued

Locality	No. of houses with bathroom	No. of houses with w.c.	Houses built with bricks	Kukh Mud Houses	Sarifahs	Vacant Houses
Rusafah	7,201	18,675	16,690	1,643	-	127
Karkh	3,952	10,510	9,162	1,713	-	50
Sarifah (on both sides)	2	364	-	-	1,235	-
Kadhimiya town	2,709	5,871	5,048	1,126	850	90
Villages surrounding Kadhimiya	111	160	119	2,114	185	18
Bajiyat al Washash	-	434	-	1,091	961	2
Washash Village	410	1,351	807	70	167	20
Tajiyat Agerguf	-	1	-	1,083	22	-
Karradat Mariyam	746	1,302	815	793	21	17
Shakriyah	-	2,721	3	2,082	749	-
Harthiyah	86	282	80	373	76	3
Sarifah area	-	156	-	3	492	-
Villages surrounding Durah	39	278	69	2,672	169	7
Karradah al Sharqiyah Nohiyah Centre	7,142	9,961	7,781	4,002	-	259
Sarifah colonies in Karradah al Sharqiyah	6	781	-	-	5,744	-
Baghdad al-Jadidah and Tel Muhammad	555	1,144	712	755	1,215	4
Zufuraniyah	40	263	55	342	299	-
Shamaiyah	3	161	30	3	359	-
Villages belonging to Karradah al Sharqiyah	37	555	64	1,627	40	4
Adhamiyah Centre	7,023	11,132	7,747	4,085	3,455	186
Villages surrounding Brick Works	-	110	-	100	306	-
Villages belonging to Adhamiyah	34	52	29	1,714	68	3
TOTAL	30,096	66,204	49,217	27,491	16,413	790
Tents						
Kadhimiya	-	-	-	-	-	-
Karradah al Sharqiyah	-	1	-	-	-	-
Durah	-	1	-	-	-	-
Adhamiyah	-	2	-	-	-	-
GENERAL TOTAL	30,096	66,208	49,217	27,491	16,413	790

Source: Principal Bureau of Statistics, Ministry of Economics, Report on the Housing Census of Iraq, 1956, Baghdad (1956) pp. 5112, Table 8.

From the above table it can be seen that Baghdad had about 44,000 sarifahs and kukhs. They are of course below the modern standard of housing; moreover, most of the houses under the title "other kinds" are built of brick and mud and again are far from being up to date.

The brick houses of Baghdad consist of four categories: traditional Arab houses, modified Arab houses, which together contained 39,210 houses; and covered houses (both of the semi western and the western type) which contained 10,014 houses.³⁷

Arabs are traditionally very keen house owners. The individual's life goal is to own a house to shelter himself and his family. The following table illustrates this fact:

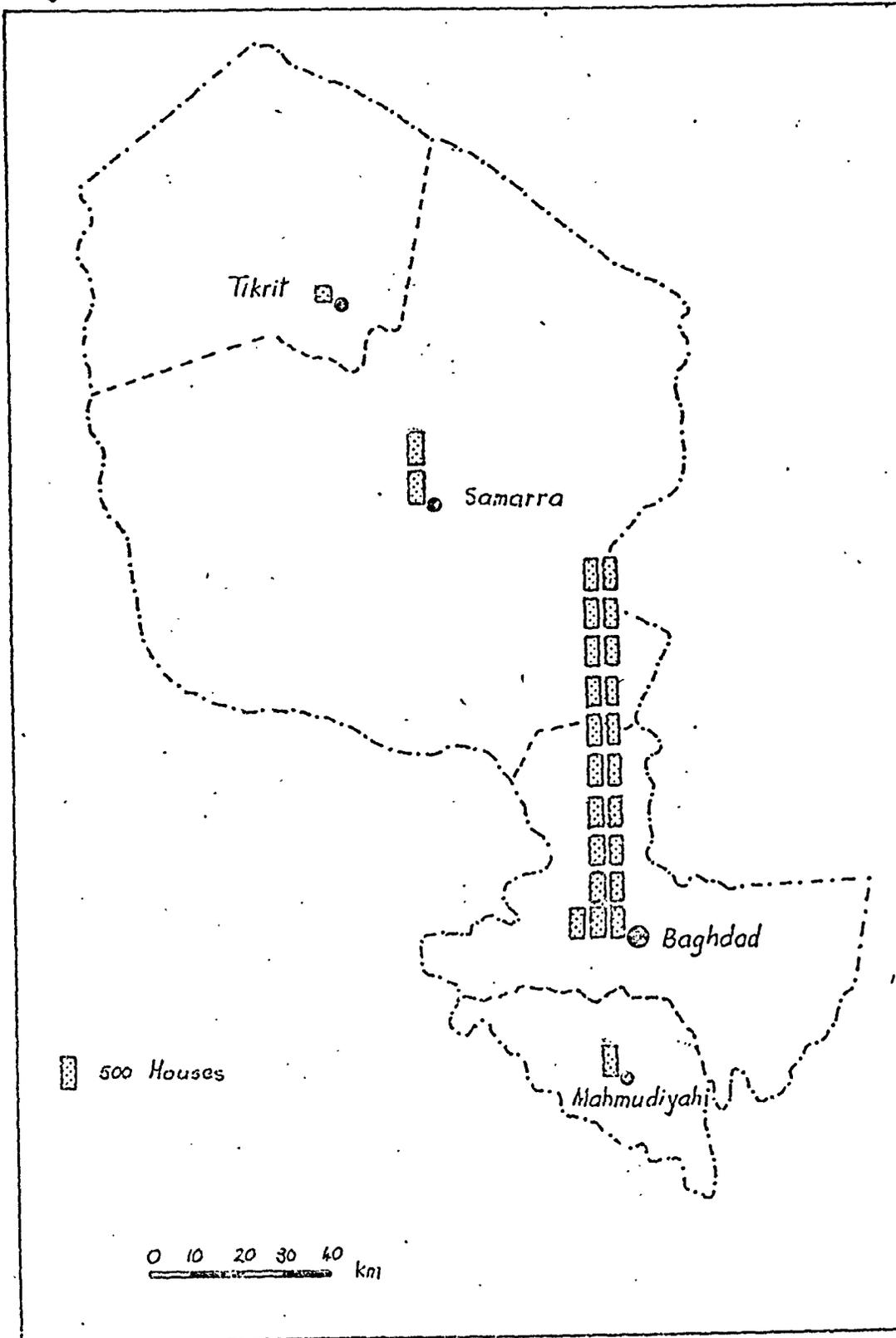
Table 812: House Ownership 1956

	<u>No .</u>	<u>Percent.</u>
Houses occupied by their owners	64,509	65.8
Rented Houses	30,410	31.0
Tenement (rented houses)	1,673	1.7
Vacant Houses	790	0.8
Rent Free Houses	637	0.7
TOTAL	98,019	100.0

Source: Principal Bureau of Statistics Ministry of Economics, Report on the Housing Census of Iraq, 1956, Baghdad (1950) 13.

Housing amenities, though greatly improved in this period, are still far from adequate.

Fig. 8.13 Distribution of Houses in Baghdad Liwa by Qadhas (1956)



Housing amenities in Baghdad Liwa by Qadhas are shown in (Table 8.13).

Table 8.13. Housing Amenities in Baghdad Liwa (by Qadhas) excluding villages of less than 15 houses. (Fig 8.13)

Qadha	Area Sq.km.	Electricity Supply	pipcd water supply	Bathrooms	W.C.	Total No. of Houses
Baghdad*	1,956	43,731	46,947	26,912	58,654	86,898
Kadhimiyyah	1,590	6,196	7,043	3,344	7,955	21,109
Madhmudiyah	1,338	439	502	189	949	5,642
Samarra	6,714	803	1,929	918	3,638	10,703
Tikrit	1,154	455	999	665	1,690	3,726
TOTAL	12,752	51,624	57,420	32,028	72,886	128,078

Source: Principal Bureau of Statistics, Report on the Housing Census of Iraq, 1956, Baghdad (1956) 41.

Electric light and power (400 - 200 volts D.C.) were supplied by a power house about $\frac{1}{2}$ km north of the Royal Hospital with a subsidiary station in Abbakhanah district.**

Water is pumped from the Tigris by three pumping stations with sedimentation or filtration plants at Ilwiyah, Kadhimiyyah and Karradah, and distributed by underground mains.

* The Greater Baghdad area includes houses in both Baghdad Qadha and Kadhimiyyah Qadha. The administrative boundaries do not coincide with the area covered by Greater Baghdad.

** In the 1950's the Baghdad Light and Power Co., a thermo-electric fuel-oil installation (previously owned by British Belgian interests) was nationalized.³⁸

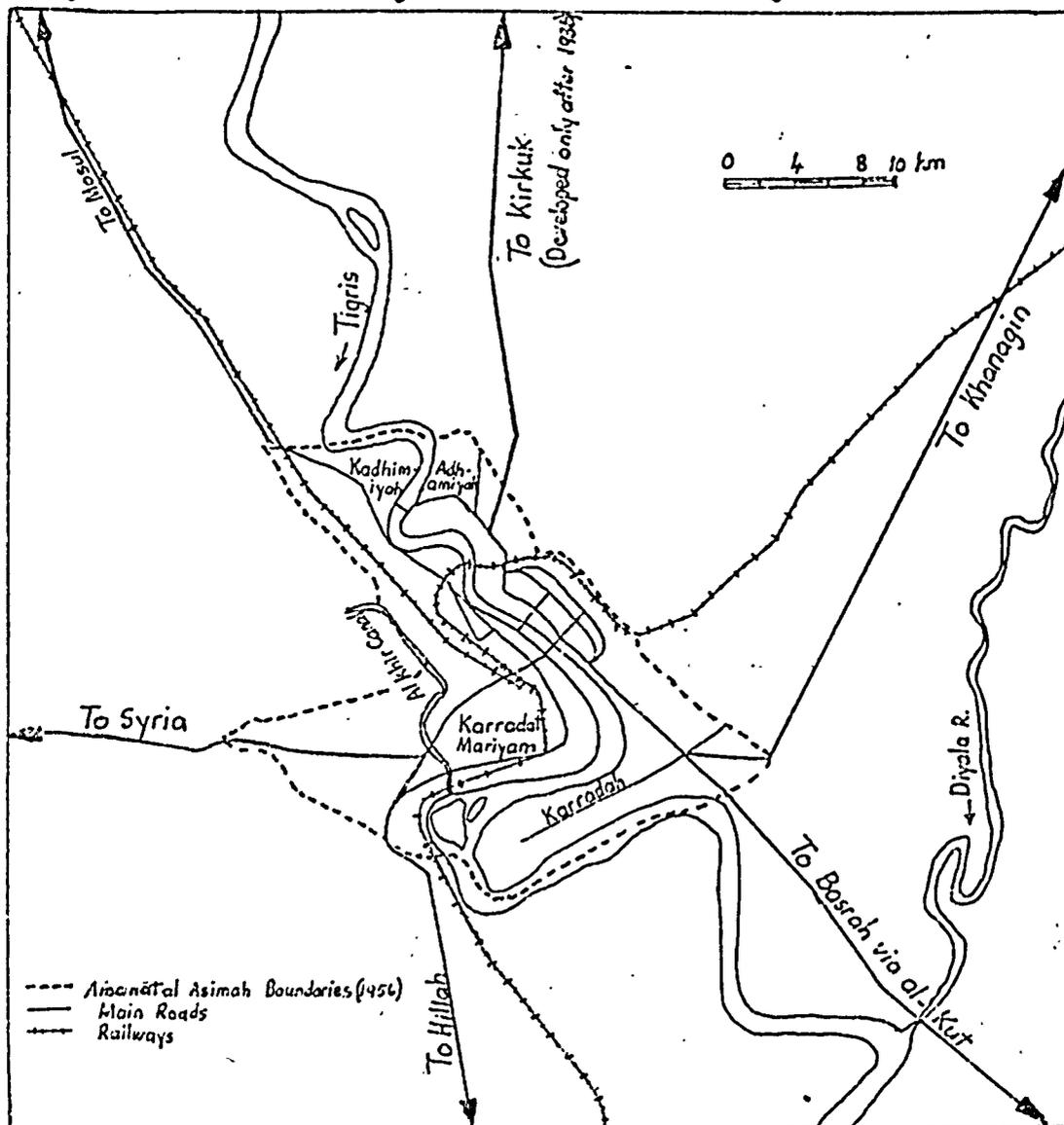
Street System and Functional Development:

As the centre of a steadily developing national road system Baghdad felt the inadequacy of its already existing streets in the period under discussion. Motor vehicles increased in number, where the traditional street system was designed for animal traffic. Consequently, the new traffic was frequently brought to a standstill.

Side streets, as well as the main streets, were not controlled properly. Vehicles of all kinds, and even lorries under repair used to park anywhere in any street. Pavements, as now, were narrow and failed to cope with pedestrian traffic. Accordingly pedestrians swarmed into the carriageway, to their own danger and to the inconvenience of cars. This was and still is to be seen especially in the central area. Reasons for such problems were many, such as (1) an inadequate number of north-south routes through the congested Old Town to link with the main roads in the residential areas developed after 1920, (2) the small number of bridges crossing the river, (3) inadequate space at the bridgeheads on both sides, (4) the non-existence of any riverside road for rapid traffic movement, (5) the lack of car parks, especially in the business centre, especially in the face of an increasing number of multi-storey buildings, (6) lack of long distance bus and lorry terminals and the absence of a peripheral north-south road enabling the traffic to by-pass the central areas.

As it stands in flat desert land, the arterial road pattern of Baghdad is very nearly hexagonal, with roads leading in north-westerly (Mosul), north-easterly (Bagubah), south-easterly (Kut), south-westerly (Hillah) and westerly (Syria via Ramadi) directions. Thus, the external main-road pattern is not completely hexagonal as it

Fig. 8.14 The Recti-Hexagonal Road Pattern of Baghdad



lacks the eastern direction, as there is no important settlement in the direction of this semi-arid land, (Fig. 8.14.) On the other hand a sub-rectangular internal main street system is to be found within the city of Baghdad. Physically and functionally the two systems are co-ordinated to a considerable degree. The structural evolution of the city in this period was intimately related to these two patterns of main roads. Houses and public buildings are increasing in number inside the city, filling in the tracts between the streets, and following a ribbon development along the roads leading out of the city.

It is interesting to note that generally even the railways follow in direction and location the rectangular street pattern of Baghdad and only in the next period, after 1956, did the city's expansion leap-frog the railway lines on both banks of the city as a new east-west axis of growth began to assert itself.

The rectangular pattern was dictated by the axis of the general north west - southeast course of the Tigris, to which the streets run either parallel or at right angles.

The further growth of the city in the next period influenced and limited the development of such an essentially simple main-road pattern, when the city began to grow in all directions.

The strong inter-relationship between this composite recti-hexagonal system of streets is a distinctive morphological feature. It was initiated in the previous period, emphasised in the one under discussion and is still phenomenal in the fifth or present period.

The Old Town, then has been forcibly opened to modern development by the internal system of 'break-through' streets. This revolutionized the function and physical structure of this

Fig. 8.15



a. Al-Rashid street early in the 1950's looking north-west



b. Al-Ahrar pontoon bridge looking north-east

traditional core. The central area of Baghdad began to undergo re-developmental processes, mainly of the transformative, replacement and accretionary kind. Both the "break-through" streets and their associated development have resulted in an incipient kind of "westernized" business centre, side by side with the still lively traditional oriental core of bazaars. The modern part can be considered as an extension to the old section. The two have integrated functionally but less so morphologically. Each one specialized in certain trades, businesses and services serving the whole community. As a result of continued growth along the break-through streets of the Old Town and their extramural extensions the rectangular pattern followed the Tigris extending ultimately from the southern-most ~~of~~ the most northerly parts of the city. However, it was still within the secondary fixation lines of the fringe belt of the pre-1956 city, i.e. within the dyke on the East Side and the railway line on the West Side. The new street systems beyond the pre-1936 city have attracted new forms, both houses and others, catering for the growing suburban communities. Simultaneously, new building forms emerged along the imposed break-through streets of the Old Town and were of a modern type, serving this section but also those who lived in other parts of the city. In spite of the vigorous central redevelopment and its diversified nature, some of the new land uses failed to enter the bazaar area. Owing to the differences in space availability, transportation efficiency and the needs of particular groups of society.

In this period al-Rashid Street (Fig. 8.15a) entered its transformative phase of building development, when some of its fine traditional buildings began to be knocked down for replacement purposes. Because of demolition and replacement operations amounting cumulatively to

central redevelopment, the composite architecture of this street began to decline gradually, and to be made uglier still by the newly introduced aircoolers whose heavy machinery disfigures the balconies and windows of the facades. Many business firms continued to be attracted to al-Rashid Street and al-Sadun Street (Figs. 8.1, 8.16). The latter then extended to Karradah al-Sharqiyah suburb. Without proper traffic regulations both sides of the central streets became highly congested, as most of the administrative and commercial functions concentrated on al-Rashid Street attracting most of the traffic to it. Furthermore, traffic from the West Side, when crossing to the east, had to cross or run along al-Rashid, which as mention^{ed}, had no parking spaces.

Al-Rashid Street and, to a certain extent, al-Kifah Street became the main arcaded streets in Baghdad. They secured a protection from the summer sun and from rain showers in winter (Fig. 8.1, 8.15b).

Banking and insurance business began to function properly in this period and found their first accommodation in a modern multi-storey building. Thus these functions introduced a new building type near al-Shurjah Bazaar and along al-Bank Street, giving this portion of the city an "American look" of business centre, though in an incipient phase, but in a quite different climatic, social and historic context which could not but disfigure the traditional harmony in one of the most historic parts of the city. In this period Rusafah, a sub-rectangle about two miles long and one mile wide, had four north-south streets, three of them being imposed over the pre-existing maze of tortous zuqaqs and thus fragmenting this compact part of the Old Town. They were al-Nahr, al-Rashid, al-Kifah and Sheikh Omar Streets. Thus instead of the mass of zuqaqs and agids, six small piazzas were

found along al-Rashid and two along al-Kifah Street. Al-Kifah Street, the second break-through street to be opened in the centre, swings round in the south-east to join al-Rashid Street near Bab al-Sharji. It grew gradually in this period to become a second-grade business street.

These streets were linked together by a few cross streets, the chief of which are al-Amin and al-Wathbah Streets cut through the compact area to the two bridges of al-Shudada and al-Ahrar, constructed between 1938 - 1941, replacing the old pontoon bridges.

Along the new central break-through streets of Baghdad more central redevelopment took place. New frontages were developed mainly for business and commercial purposes. Although no enlargements had taken place on the zuqaqs, almost all of them were paved in this period.

Al-Karkh on the other side preserved almost the same pattern in its central areas as in the previous period. It presented another mass of alleys even more difficult to penetrate by the new media of transport. The tramway line here was dismantled after the Second World War, consequently its road became the major traffic and residential street in al-Karkh. The main thoroughfares were constructed from the bridge heads of al-Shuhada and al-Ahrar. New streets penetrating the new suburbs were either continuations of old ones or were newly built in the form of wide tree-lined boulevards. Street construction and paving* in Baghdad increased considerably during this period compared with other towns as Baghdad commanded relatively larger financial resources.

* In 1951 the streets of Sheikh Maruf, ^SMua al-Kadhim, Imam al-Adham and several others were paved.

After 1945 the city grew rapidly towards south, north, west and east, though the west and south-north growth was more evident (Fig. 8.1). This expansion can be attributed to the fact that al-Karkh was more secure against flood, to population growth, and to the economic prosperity of the people settling in the new suburbs.

Convenience of design rather than functional requirements were considered in planning these streets which are mostly of the gridiron pattern. The relative stagnation of the city's architecture, and its semi-regional isolation was broken by the building of more national highways as well as by the increase in flood control. Until the end of the previous period Baghdad could be said to have been a city without suburbs, because of the absence or neglect of mechanical means of transport. Also the city had only narrow pontoon bridges. But, as has been seen, because of street improvements and growth the increasing number of cars, and the establishment of public bus services, the city of Baghdad entered its new stage of suburbanization. Indeed, for the first time Baghdad came to be a city of dual face in terms of building fabric, a medieval and a twentieth-century one. As a consequence of suburbanization, the city extended its municipal boundaries in 1948, to enclose the new governmental and private developments in al-Harthiyah and al-Mansur, where the new race course emerged replacing the old one on the East Side. The population of the new suburbs then comprised more than a quarter of the total population of the city.

Because of the disadvantages of most of the modern central and suburban developments of Baghdad, the Arab characteristics in the layout of the Old Town should be maintained, particularly in the surviving traditional areas. Bazaars and zuqaqs for example where people can walk about unimpeded by cars should be preserved

as human-scale areas and as a cultural heritage. Being originally meant for pedestrians, they are ^{historical or ready-made (pedestrian} ~~historical or ready-made~~ pedestrian precincts' and there is no need what soever to have cars entering every zuqaq which is cool and usually shaded. Catering for the needs of the specific human community of Baghdad should be one of Amanat al-Asimah's and the central authority's major goals.

It is true that as a result of the social levelling engendered by the migration of the original property owners and their replacement by multi-family units of poorer classes, slum degradation has been inevitable. But there the question arises as to how this replacement process can be avoided. All traditional mahallahs are of central location. They are physically and very much functionally integrated with the still functioning bazaars and mosques. By improving and slightly modifying their building fabric, by equipping these mahallahs with sewage systems and by looking at other aspects as well as merely the economic one, these mahallahs could be used quite successfully to house working-class people under the supervision of Amanat al-Asimah. Amanat al-Asimah should allow not more than one family to each house. The houses close to the bazaars could be used as Khans, workshops, and even departmental stores. This part can indeed be transformed into a priceless area where new bazaars could be developed in particular sections to house some of the modern shops. The whole Old Town is within walking distance of this locality. Already many European towns have begun to restrict the use of cars in their central areas when it was realized that humans need to be masters of some areas without the unnecessary, unnatural and unhealthy competition of cars. This very small area, which is not more than 4 sq. kms should be treated as a valuable historic heritage that is very different from the surrounding modern development. The

architectural and cultural value of this central area, i.e. its uniqueness, will very likely increase the context of the contemporary far less distinctive development outside the Old Town. The completion in this period of Sheikh Omar, the most easterly major street in al-Rusafah, led to the transfer of the railway sidings to their new site beyond the eastern bund in the following period. This street, as well as its equivalent street of Sheikh Maruf on the West Side, both of them peripheral, attracted small firms for repairing, craftsmen's workshops, garages and warehouses. They are three-fold in function - light industry, retailing and residential. They have failed even now, to develop a distinct architectural pattern. Sheikh Maruf, a curved street, is the 'consequent' street following the primary fixation line of the Ottoman Wall, in this section of the Inner Fringe Belt while Sheikh Omar found its way through the already developed intramural workshop area of al-Rusafah. Further to the east, between the latter street and the east bund, a small parallel street was cut through this intramural light industrial and poor housing area for transportation purposes. These developments have promoted the expansion and consolidation phases of the fringe belt.

In this period Baghdad had only four bridges, two of which were located in the commercial centre, the combined rail-and-road bridge of al-Sarrafiyah with limited road capacity beyond Bab al-Mudham (built in 1951), and the pontoon bridge of al-Aimah linking Kadhimiyah and Adhamiyah, the two old northern twin suburbs of Baghdad.

By the end of this period the city stood at the threshold of great physical and functional readjustment when a new bridge at Bab al-Sharji and a new north-south break-through street, al-Jumhuriyah, began to be developed. Al-Jumhuriyah Street sliced through al-Rusafah

to connect al-Sadun Street with the north road leading to al-Adhamiyah via al-Waziriyah. Both of these revolutionary steps were completed in the next period.

Consequently, al-Tahrir Square (now the major and biggest square in the city) began to be constructed in line with the projected al-Jumhuriyah Bridge, to be completed in the next period.

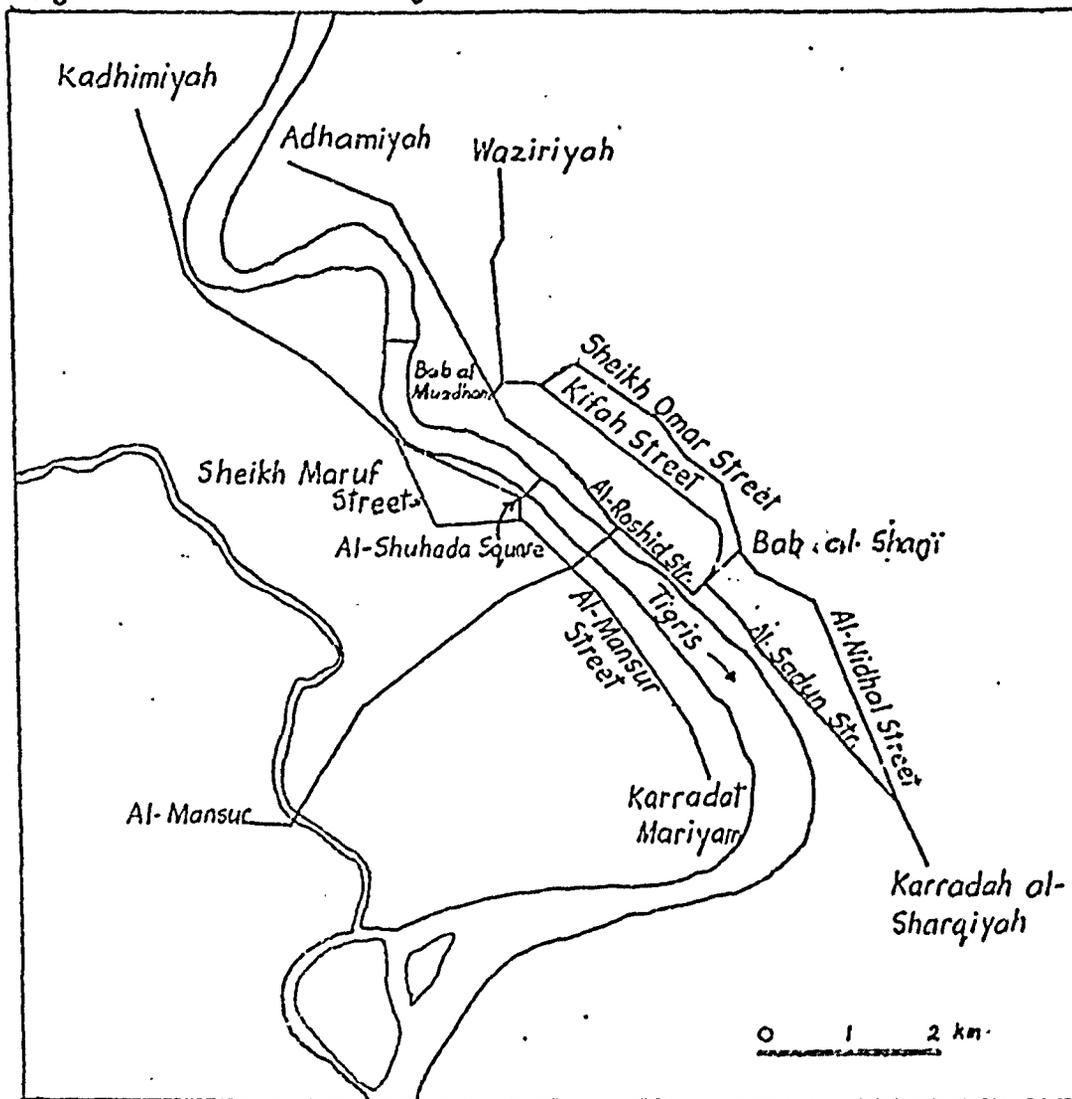
Although Abu-Nuwas, the night-time recreational promenade did not reach Karradah it was extended, thus relieving the congestion along the significant parallel street of al-Sadun. Some of the houses built after 1920 along Abu Nuwas Street began to change their function as the street began to be lined with a considerable number of casinos, bars, restaurants, hotels and coffee houses. It attracted many clients from the old recreational centre at al-Maidan to the north of the Old Town.

A ring-like road was constructed around traditional Kadhimiyyah, penetrating the beautiful dense, palm groves. This township has been revolutionized both in function and structure by the construction of this street and al-Sarrafiyah, the rail/road bridge. The latter secured easier traffic flow to and from Baghdad (al-Rusafah). New houses began to replace the orchards, heading towards the river. Kadhimiyyah's built-up area lay one km to the west of the Tigris because people, mainly Shiah, wanted to build their houses as close to the shrine of al-Kadhim as possible, compared with Adhamiyah on the other side which developed most of its buildings along the Tigris but not far from Abu-Hanifah's tomb. This tomb has been rebuilt and is very fine, with a theological school (madrasah) attached.

Although private cars, taxis and buses increased in number replacing the traditional arabanahs,* the city felt the necessity to organize a

* The total number of passenger cars, buses, and trucks was 20,826 in 1951, more than a third of the cars were in Baghdad.39

Fig. 8.16 The Routes of Baghdad's Public Buses in 1956



public transport service. Therefore, Law No. 38 was enacted in 1938, by which the autonomous Baghdad Passenger Transport Board was established. The war intervened and only limited services were brought into operation in 1942, using converted army trucks equipped with locally built bodies. However, services started only after the Second World War when the aforementioned law^{was} implemented in 1947, and in 1950 the service was taken over by the central government.⁴⁰ Since then it has been operated by an Administrative Board under the Ministry of the Interior consisting of a Director General. Now it is connected with the Ministry of Municipalities.

As in other towns of the world, the motor bus lengthens the radius of regular communication, and accordingly the building of new single-family houses accelerated along almost the whole length of the new lines. It is worth mentioning that in many cases bus routes in Baghdad followed the rapid residential developments.

Decentralization or suburbanization was encouraged by such innovation, which made it possible to live at greater distances from the traditional central areas, especially in the following period (Fig. 8.16).

A fleet of 263 buses of all types operated. They were in poor condition owing to excessive service and poor equipment of workshops and garages. A decision was taken in 1950 standardizing type of buses.

From (Fig. 8.16) it can be seen that Bab al-Mudham and Bab al-Sharji were the most important nodal points of the city. This was because of the concentration of governmental offices in new and old buildings there. At Bab al-Mudham, for example there was al Amanah Hall, al-Sh'ab Hall, the headquarters of the Omnibus Administration, the Childrens Hospital, the College of Arts and Science, etc. Whereas in Bab al-Sharji, the thriving second centre, there are some governmental offices, all the modern European-style hotels, nearly all the first-grade cinemas, most of the business houses such as the branches of western department stores,

travel bureaux and many banks. This area, in fact, attracted, and still does attract, most of the business firms and administrative offices. Very few ministries and general departments were shifted from the traditional administrative portion in al-Maidan and Bab al-Mudham, to various parts of the city.

The Business Centre

In the inter-war period, a vast amount of European investment had flowed into Iraq and many other Middle Eastern countries, mainly into the capitals, accompanied by a significant number of financiers, merchants, engineers and skilled workers. Practically all the main sectors of the national economy had passed under foreign control which consequently increased the westernization phase of the commercial centre through which the whole pattern has been modified. Westerners and westernized people tend to think and plan in terms of elaborate technical organisation. These influences, however, can be traced as far back as the second half of the past century, with the blossoming of the factory industry in Britain, and to a lesser extent, in other European countries.

As a result of these economic developments, many traditional buildings in the commercial centre became inconvenient for modern business uses, and a wave of demolition took place, to be followed by replacement operations. These central activities were accompanied by some alteration and modification in the pattern of the fringe belt which was to become an Inner Fringe Belt in the next period.

Following these processes, the commercial centre in fact has increased its functional capacity, aided by the transport development which, in turn, changed the whole pattern of land values. The handling, transport and distribution of merchandise was to some degree modernized, shops and hotels of European pattern multiplied, with Jews and Christians

still prominent in those activities.⁴¹

As the economy of the country improved, the purchasing power of people, particularly in the major towns, increased. This modified the selection of goods for sale in the bazaars and affected the type of goods in the new retail shops both along the extensions of the business centre and on the new streets.

It is interesting to notice that, in contrast with the large modern firms on al-Bank, al-Rashid and al-Sadun streets, mostly run by foreigners, many of the local merchants still retained their habit of disguising their wealth in either poor looking shops or in back streets.

Most of the new constructions in the business centre, such as the scores of bank buildings close to the bazaar area, and throughout the city, have departed from Arab architectural principles, climatic requirements and cultural values.

A few cross and linear thoroughfares jabbed into the unique traditional central area. This as well as other areas of the city, have fallen prey to the superficial understanding and application of 'modern architecture' and 'town planning'. Many metropolitan khans and considerable sections of the suqs and bazaars were demolished. This was encouraged by the absence of orderly legislation concerning the preservation of the historic heritage. Moreover, a disastrous fire raged in 1939, and the metropolitan bazaar of al-Shurjūh was badly damaged.⁴²

In 1951-52 the central area was drastically affected, when the government in premature and unconsidered decision knocked down the old 'red light' mahallah of Gug-Nazar, in al-Maidan district (Fig. 8.1). Consequently, prostitutes dispersed throughout the city, concentrating mainly in the southern parts of the city. This led to many new com-

Fig. 8.17



AL-Ahrar
191. The new ~~Al-Ahrar~~ bridge at Baghdad

- a. Al-Ahrar Bridge soon after construction in 1938-41
(after Naval Intelligence Handbook)



- b. One of the frequent street encroachments (Kadhimiyah)

plicated social and moral problems in the rather conservative society of an Arab capital.

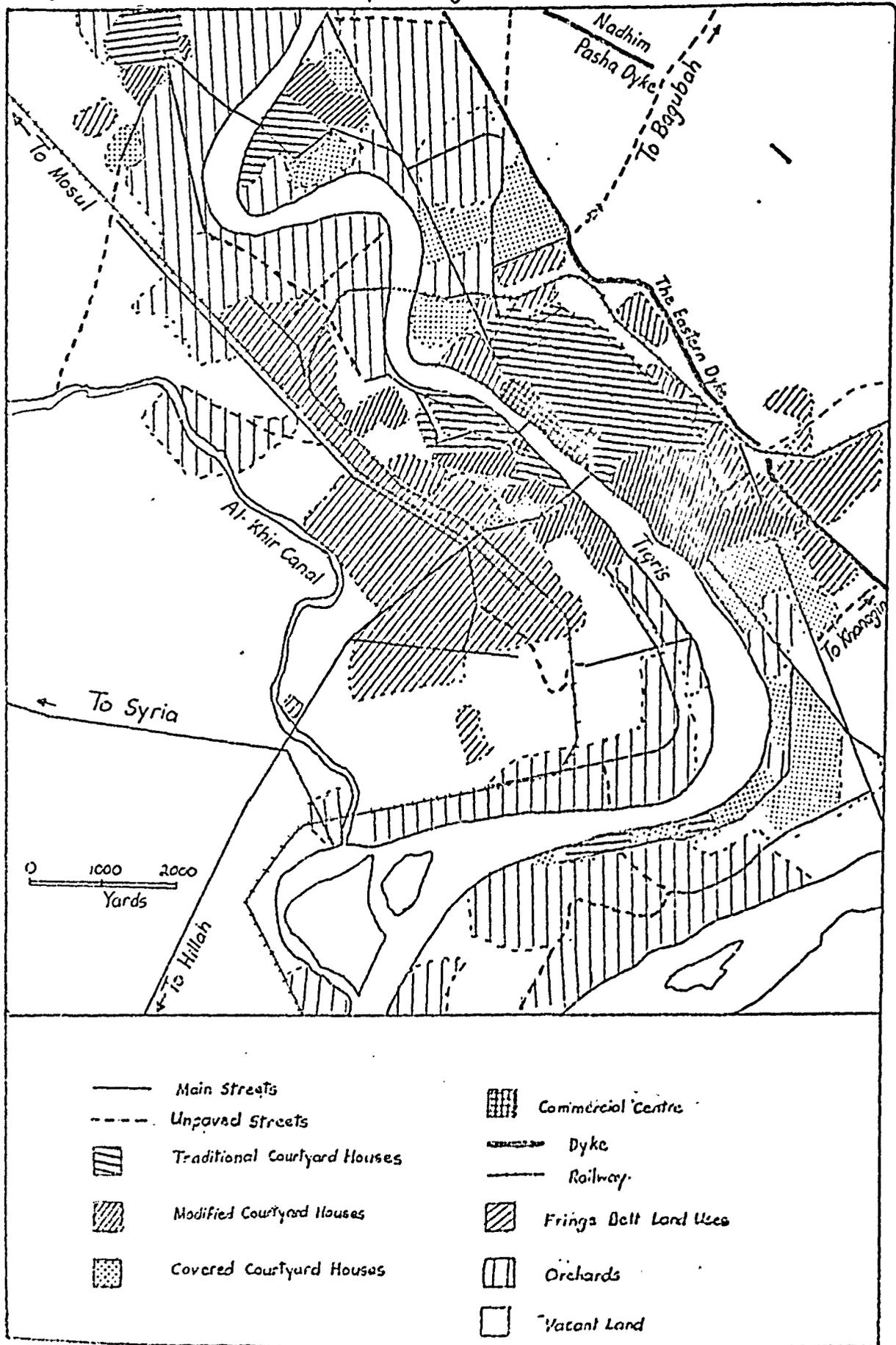
The buildings, especially after the Second World War have been replaced by 4 - 7 or 8-storey modern constructions of reinforced concrete. The well-to-do families have nearly completed their evacuation of this central area, contributing thus to the suburbanization process on both sides of the city.

In the course of functional developments, the khans of the business centre modified some of their functions; instead of catering for camel and horse caravans, they began to house merchant offices, textile, stationery, shoe firms, etc. and in al-Kadhimiyah for example, mechanics' repair shops which serviced mainly pick-ups and lorries. Thus the artisans of the commercial centre began to feel the severe competition of such development.

As a result of the establishment of the National Bank (now the central Bank of Iraq) located in the business centre, the national currency began to be issued, in 1949, based on sterling to which bloc the country belonged.⁴³ This event has had good economic consequences in the country.

Between 1938 and 1941 the central pontoon bridges were replaced by two steel bridges. Each formed an imposing structure 700 feet long and 50 feet wide. These are the first permanent bridges to be found in Baghdad through its long history. They have their effects on the street system, traffic volume and commercial activities of the commercial centre. They have further emphasised the traditional centrality of the bazaar area (Fig. 8.17a).

Fig. 8.18 General Land-Use Map of Baghdad in 1945



In this period the business centre ^pexpanded indiscriminately into the surrounding residential, areas in both Rusafah and Karkh. The city's business centre is centrally located on both sides of the Tigris and extends 500 - 750 m in depth from the river bank on both sides. But a general shifting of the central activities has been noticed chiefly those related to retail business. This shift, or in fact extension, is still taking place, heading to the south particularly along al-Sadun and the new streets on both sides, influencing the over all commercial hierarchy of the town. The movement of the commercial centre commenced in 1920, and is still occurring, epitomized by the shift of some banks and the post office. Therefore, concurrent with the movement of the population in the centre itself, many hotels, business buildings and cinemas have emerged along the new extensions of the business centre. Al-Sadun Street thus became more commercial in character than residential. With the vast expansion of the city new commercial subcentres of retail shops conveying goods for daily consumption from all over the world, have developed on a nuclear, linear, cluster or scatter pattern.

In spite of all these functional and physical changes and the alteration taking place in the business centre and other parts of the city, the bazaars remained as at present the commercial heart of the city. Some bazaars retain their craftshops. Here artisans have their retail shops grouped in certain sections, of which Suq al-Qumash (textile market) al-Saghah (gold and silversmiths' market) al-Safafir (coppersmith's bazaar) and the bazaar of booksellers are the most attractive (Fig. 8.18).

The Bazaar area was extremely congested especially during the day. The upper floors were mainly occupied by manual and casual workers.

The working class and poor people began to occupy the contiguous parts of the peripheral business streets, and the heart of the city, reversing thus the classical distribution of the social classes, bearing in mind the fact that tribalism and kinship were still playing their parts in this residential redistribution, though not to the same extent as in previous periods.

A major reason behind the continuous congestion of the commercial centre (bazaar area) was that numerous long-distance bus and coach services converged upon Baghdad, as well as short-distance services from the Baghdad region. They all were entering the business centre to pick up and set down passengers, thus increasing traffic congestion. In the following period some terminal stations for inter-city traffic were established on the edge of the commercial centre, from which they continue their journey into the traditional Baghdad by local bus services or by car.

In terms of location the bazaar area maintained its site between the central bridges, intermingled with or near to the administrative buildings. The latter are mostly close to the river bank above and below al-Shuhada Bridge. The principal ones are the Abbasid School of al-Mustansiryah, the Law Court, al-Sarai, and the Army Headquarters in the old Ottoman Citadel by Bab al-Mudham and the Royal Hospital outside the wall line in the north.

The main khans, always and bazaars of Karkh were in the mahallahs of Suq Hamadah, Suq al-Jadid and the bridgehead of al-Shuhada serving local and metropolitan areas.

Cultural and Administrative Services (Figs. 8.1, 8.18)

The construction of colleges, schools, Royal edifices, banks foreign legations, transport buildings, administrative buildings, mosques and hospitals were the main public buildings scattered throughout Baghdad with some concentration in the north-west part of Rusafah. They housed educational, administrative, religious and health services.

Iraq, like any other newly developing country, had no prevailing tradition of public participation in governmental processes. The Government, on the other hand, faced many public demands, putting it all the time under a strain.

It is a common occurrence in under-developed countries that a lot of money is spent not on sewage systems and comprehensive housing projects, but on schemes carrying prestige value and useful only to a minority. In Baghdad for example, symbolic monuments and governmental palaces came into being to symbolize, perhaps, the emergence of the country. There are many acute problems in Baghdad which need to be treated with higher priority.

Some of the new governmental buildings seem to have a very little character or harmony with their surroundings, as Amanat al-Asimah and other authorities did not yet recognise any philosophical, cultural, artistic and social demands in the design of many of their new buildings.

It is rather strange that many governmental buildings are privately owned and rented to the government. Some of these cases (renting transactions) were perhaps deliberately planned!

Neither in this nor the next period did Baghdad have any civic or governmental centre, though plans were put forward to develop them

on the East and West Sides respectively. The civic centre and governmental centre were envisaged as being 72 and 70 acres in extent respectively. The appropriation and demolition for that purpose began in the next period.

The necessity for more administrative building was realised as the government itself developed. The national and municipal governments became far more complex and diversified in function, and this growth required more buildings and more space.⁴⁴

In the period under discussion public and administrative land uses expanded from their traditional administrative portion but outside the wall line at Bab al-Mudham and al-Waziriyah and the second into various areas in the new suburbs. The administrative expansion was necessary and easy to achieve. There was not only a vast amount of vacant land but much of it was already state-owned and therefore obtainable at no cost. The fact that the government is the major land owning body paves the way for proper development. Most of the government residential areas were developed on such land as well.

The provision of schools in this period was the responsibility of two authorities, the Ministry of Education and the Ministry of the Interior. As at present, most of the school buildings in the built-up areas were inadequate and had little or no adjoining open space for use as playgrounds. The main factors deciding the location of schools are that they are either on state-owned land, cheap land, or land at low rates of rent. No proper consideration is given to accessibility or the safety of the children; there is also no proper consideration of their relation to the distribution of the population to be served.

Bab al-Mudham and to a lesser extent al-Waziriyah are the major administrative areas. The people's Hall (al-Shab), al-Amanah Hall, and the buildings of the passenger service headquarters, were built at Bab al-Mudham in this period beyond the Ottoman Citadel. They were some of the most modern buildings in the city. Al-Awqaf had built a fine library in this area, it dominated the townscape of the area up to 1958.

Although the university of Baghdad, developed in the 1950's has numerous colleges scattered widely throughout the city, its main concentration was obviously in al-Waziriyah, where nearly all of the following colleges and educational institutions were established in this period. They are the Engineering College on Abu-Tahib Street, the College of Art and Science at Bab al-Madham, now housing the Girl's College and some other university departments, the College of Commerce and Economics, now the college of Arts, the Veterinary College, the College of Agriculture at Abu-Ghraib on the Syrian high road and the Art Academy (then a secondary school) on al-Imam al-Adham Street, opposite the Royal Palace (al-Bilat). They increased the importance of the Bab al-Mudham area as a major square in the city particularly during daytime, compared with Bab al-Sharji square which is thriving more at night owing to the concentration of recreational facilities.

In this period more than 35 millions I.D. were spent for expropriation of the orchard and palmgrove-dotted-land of the Karradah Peninsula, where a new university will be located. The new university will pull together and enlarge a number of colleges scattered about the city.

There was also a private university of al-Hikmah (American) on the Basrah highroad in Zufuraniyah which became part of Baghdad University in 1968.

As at present schools were operating in many kinds of buildings which could be classified in three basic categories: very poor schools - housed in traditional courtyard houses, schools which were functioning in rented houses of different styles, depending on where they were located in the city and schools which were built by the government and functioned in modern buildings.*

T. al-Rawi has put the number of students in Baghdad by 1942/43 at 30,000.⁴⁵ In 1947, Baghdad had 31 per cent of the country's literates and 44 per cent of the country's literate females.⁴⁶ The literacy in Baghdad among males and females over five was over 40 per cent and 20 per cent respectively.⁴⁷ The number of students in colleges reached 900 in 1940/41,⁴⁸ the figure jumped to 11,618 students in 1956.⁴⁹

In 1950, about 80 per cent of the men and 95 per cent of the women in Iraq were illiterate. Moreover, educational concepts, then as now, were far too narrow and too little related to everyday problems of living. There is a great gulf between what is taught in the schools and the exigencies of practical life.⁵⁰

The distribution of literates and illiterates throughout the country in 1953 proves that the greatest percentage of literates, that is about one third of the population, was in Baghdad area. Attendance at elementary schools was high, exceeding 50 per cent of the

* The State provided elementary, secondary and higher education all free from December 1952.

corresponding age groups in Baghdad. The pupil/teacher ratio in girl's schools in Baghdad was 2.96 teachers per 1,000 girls.⁵¹

Table 8.14 Some Statistics of Students of Baghdad Liwa and Iraq in 1953

	Population 1953			Students					
	Male	Female	Total	Elementary			Secondary		
				Boys	Girls	Total	Boys	Girls	Total
B. Liwa	424,630	417,490	842,120	47,692	25,248	72,940	8,091	3,896	11,987
Iraq	2,181,868	2,488,958	4,670,826	195,803	62,530	258,333	26,666	8,144	34,810

Source: Doxiadis Associates, Housing Problems Policies, Programmes in Iraq, Athens (1956) 411.

The main hospital centre of Baghdad is situated below Bab al-Mudham at Iwadhiyah. It had 625 beds in 1943.⁵² Originally this hospital was a big orchard owned by Najib Pasha, the then Wali of Baghdad, on which a palace was built to be his residence. By 1870 it was converted into a governmental palace for international guests. In the period 1881-1897 it became again a residence of the Wali, but in 1897 it became a military hospital of al-Majidiyah. During the British Occupation it was used by the British troops as their hospital. Finally in 1923, the government of the new state of Iraq changed it into the main Royal Hospital of the country. It has been frequently rebuilt but is now replaced by a modern multi-storey building attached to the Medical School.

Late in this period Dar al-Salam Hospital was built in al-Sadun area, having the advantages of peripheral location.

During this period 1948-1951, al-Twaithah Hospital (80,000 m²) was constructed on a site near the confluence of the Tigris and its southernmost tributary, the Diyala River. It has been used since then as a T.B. hospital. The isolation hospital in al-Karkh (250 beds)

was peripherally located and well reputed. Al-Shab hospital (142 beds) in Iwadhiyah and the children's hospital (89 beds) in Bab al-Mudham were built in the same area. In 1950 the eye hospital at al-Karkh was opened.

In 1949 there were 797 doctors in Iraq of whom 419 or 53 per cent were in Baghdad.

In 1953 Baghdad had 25 hospitals (private and public) and 551 doctors, out of the 84 hospitals and 874 doctors then already in the country.

In spite of progress in public health services, the standard was very low compared with European countries. In 1943, for example, the death rate of infants under one year of age per 1,000 was still 252,⁵³ an extremely high rate. There was a very high incidence of such endemic diseases as trachoma, hook worm, bilharzia, malaria and dysentery. Many of the then prevailing diseases were the by-product of polluted water and insanitary, congested living conditions.

In 1956 the death rate was about 30 per 1,000 population and infant mortality was about 100 per 1,000 live births, that is about 10 per cent of the babies born alive died in the first year of life.^{54*}

In 1947 an English firm prepared a report on the installation of a sewage system but, like the German one prepared in the 1930's it was not implemented. It should be emphasized that the completion of Baghdad's overall sewage system is urgently needed not only for hygienic purposes but because of the rising level of subsoil water.

* As at the present time there was no registration of infant mortality.

Apart from schools, colleges, hospitals and administrative buildings, the city of Baghdad had five museums, located as follows: the Central Museum at al-Mamun Street, the Museum of Arab Antiquities in the metropolitan Khan of Mirjan, the Costume Museum, and the Weapon Museum in al-Wastani Gate, the only surviving gate of Baghdad's medieval wall.

The Government Guest House was built in a pretty section of an affluent area on al-Nidhal Street. The latter was a new street commencing above the wall line from Sahat al-Tairan and swerving to meet al-Sadun Street at al-Fatih Square. It is a double carriage boulevard lined with a few administrative buildings and high class detached houses built mainly between 1936 and 1945. Some Embassies were attracted by this street, while the other^s were primarily located at al-Waziriyah not far from the Royal Palace and the Ministry of Foreign Affairs, a fine piece of architecture built in this period, having an Arab-style facade.

The administration's movement to the south was further accentuated by the establishment of the Directorate General of Surveys situated beyond the south-east corner of the city wall, but protected by the contiguous dyke running towards the Diyala river to the south-east of the city.

There was no essential religious change in this period, and mosques continued as the finest architectural features in the city. In 1955 Baghdad Liwa had 109 mosques, i.e. 15.5 mosques per 100,000 Moslems, employing 442 employees.⁵⁵ Some of the tombs and shrines were still peripherally located, such as the tomb of Zummurud Khatun and of the Sufi mystic al-Hallaj, both of which were outside al-Karkh.

Fig 8.20 General Land-Use-Map of Kadhimiyah

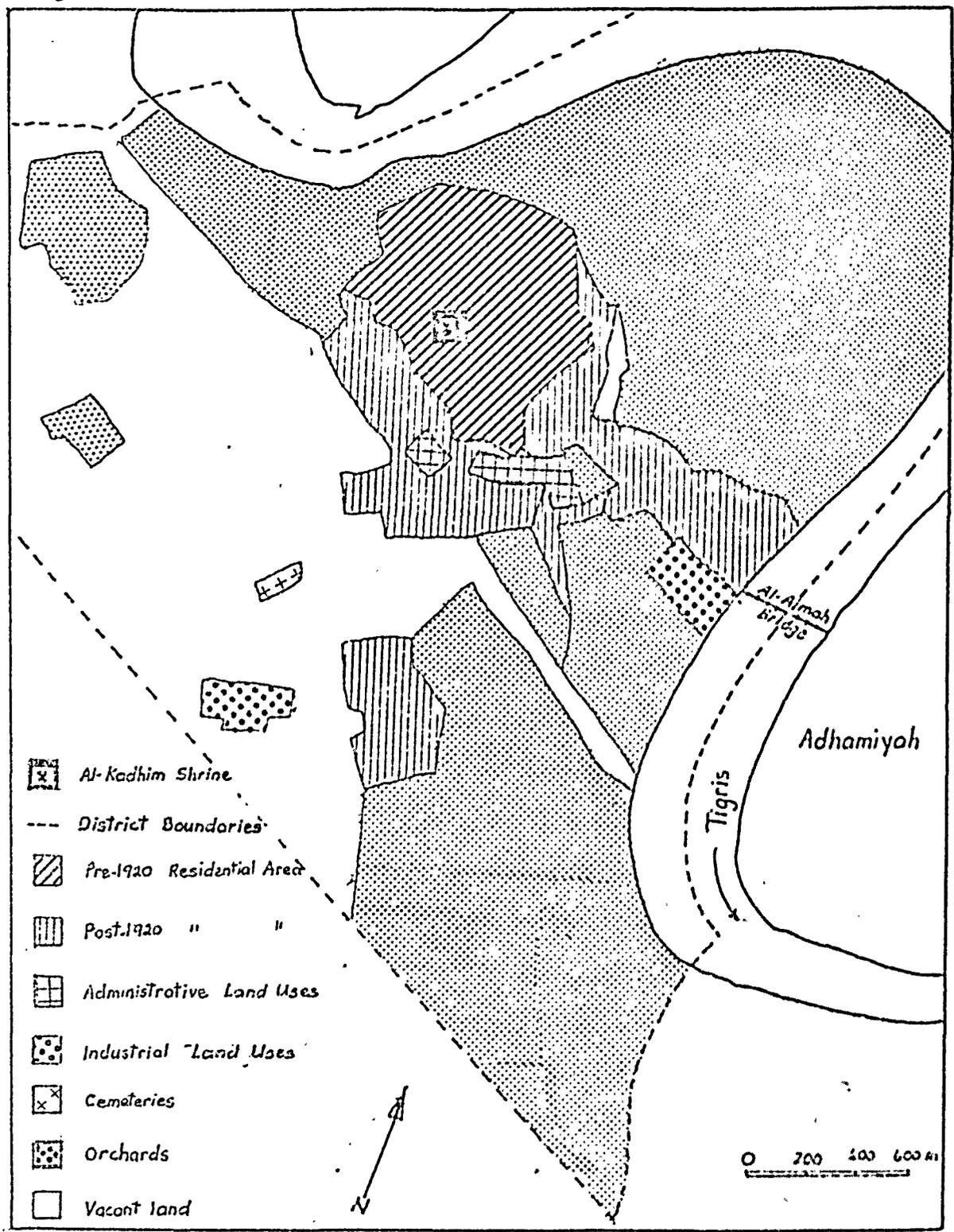
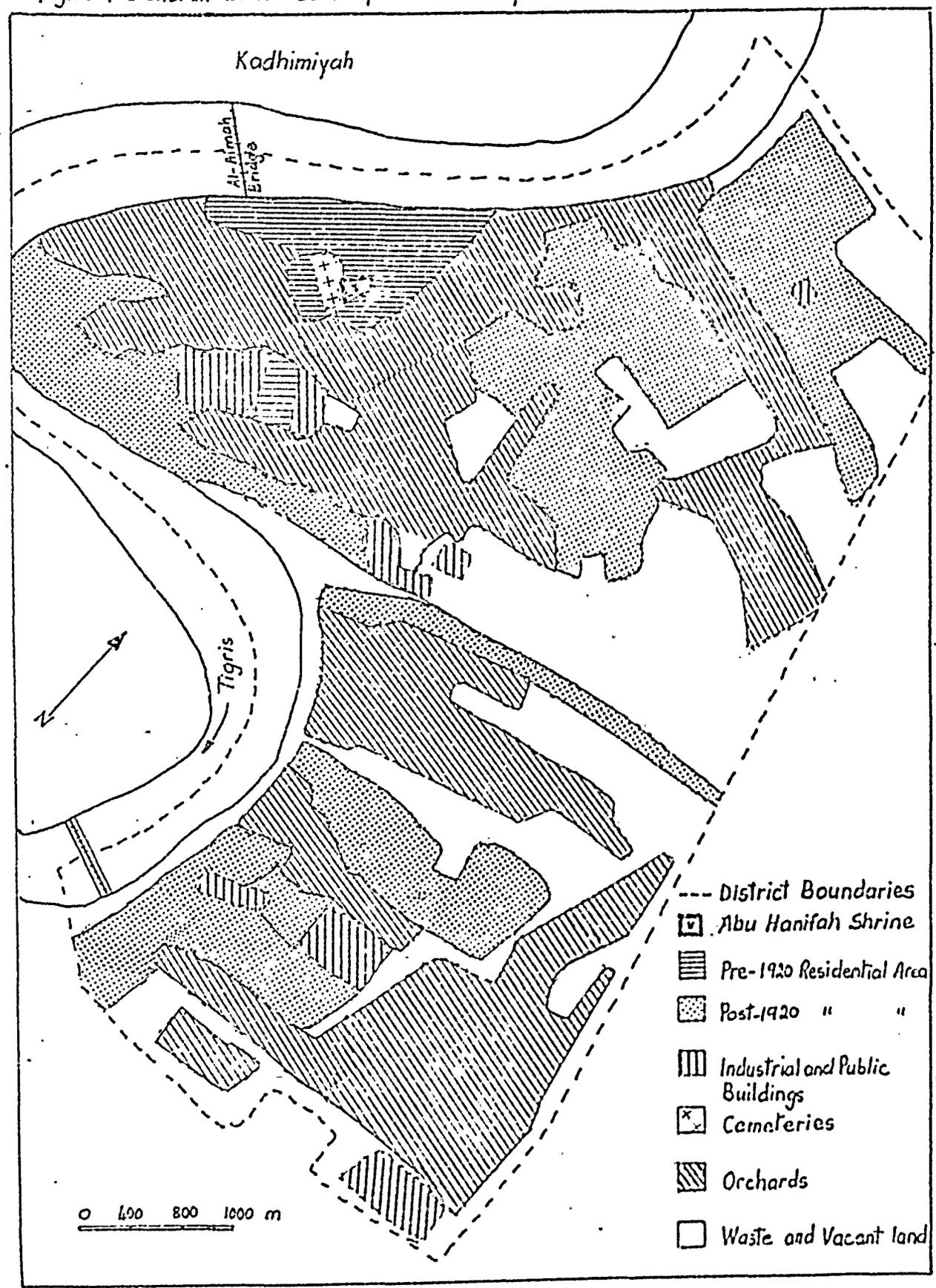


Fig.8.19 General Land Use Map of Adhamiyah



As at present the cemeteries gave an impression of complete neglect, they were not planted with trees and at the same time were overused.

The main railway area was west of al-Karkh, between al-Shalchiyah, the main railway repair works, and Baghdad West Station. The present Central Station at al-Karkh was built in 1948 and opened in 1952.

Another sizeable railway area lay on the East Side round the North Station, outside the wall. It was connected with Baghdad West Station by railway line over the rail/road bridge of al-Sarrafiyah.

The ditch beyond the levelled old wall in the southern part was converted into al-Ummah public park. Further south in al-Sadun area a well designed park was completed, until the 1960's the major park in the city. Many new industries emerged along the eastern edge of the city as the traditional houses in the commercial centre failed to accommodate them. They, with the repair shops, cemeteries, tombs, gardens, camps, four large brickworks, military training areas and vacant places along the lines of the old wall on the East Side and similar land uses on the West Side along Sheikh Maruf Street represented the eastern and western stretches of the fringe belt which became the Inner Fringe Belt in the next period. The growth of this fringe belt in this period was as a result of both expansion and infilling giving this part of the city its characteristics⁵⁶ by the end of the period.

Industrial Development (Figs. 8.1, 8.19, 8.20)

The railway surrounding the Old Town in sub-rectangular fashion, the availability of cheap vacant land and the nearness to the commercial centre were major factors in the development of the industrial areas of Baghdad. These typical fringe-belt areas, in an incipient stage of development in the previous period, became a distinct

functional section though intermingled with lower-class dwellings.

The first site in al-Karkh was beyond Baghdad West Station in al-Salam, an area which had a few flour and textile establishments; they were located to the west of the principal works and repair yards of the Iraqi railways at al-Shalchiyah. The second was along the peripheral street of Sheikh Omar and other shorter streets running between it and the eastern bund. Here, the majority of industrial firms were of small scale, and mostly repair workshops, iron foundries, garages, warehouses and the like. The third emerged on the southern limits of the East Side beyond al-Rashid Barracks, comprising breweries, bottling plants, a power station and others.

The fourth and most recent is al-Durah Petroleum Refinery Plant which came into operation in 1953, changing the functional and physical pattern of the West Side. It produced one million tons per year.* Al-Durah Refinery then represented the heavy industry in the country. It occupies 2,750 acres. Crude oil is supplied from K.2** near Kirkuk by a pipeline of 12 inches in diameter. Opposite it, on the other side, is a cement works occupying 750 acres and built in 1944. They were isolated from the residential areas and had the advantage of availability of plentiful water supply from the Tigris.⁵⁷ They developed their specialized buildings in an

* At the present it produces 2 million tons annually.

** K.2 is the name of one of the oil townships founded in Iraq after the 1940's. The letter K denotes Kirkuk, the name of the nearest major oil producing city. Also there are H1, H.2 (after Haifa); T.1, T.2 (after Tripoli, the terminals of the Iraqi pipelines of petrol.

open area where they could give off noxious or disagreeable fumes without much harm. It uses lime brought from Kirkuk and in 1949 began to produce 250 tons daily.⁵⁸

The brickworks were located along the Kirkuk railway and along the Mosul highroad, i.e. to the east and north of the city. A few modern brickworks were developed, and in 1954 the State Industrial Company was established to produce different kinds of building materials.⁵⁹ The number of brickworks in Baghdad was 81 in 1954, this increase being concurrent with the physical expansion of the city.

As at present most of Baghdad's industries were light and on a small scale. They are usually inoffensive, use electrical power, are relatively noiseless, and occupy lightly constructed single-storey premises and depend entirely on road transport. They include small firms such as bakeries, confectioneries, establishments for food processing, ice manufacturers, carpentry, production of ceramics, buttons, glazed tiles, aluminium pots, etc.

A considerable number of traditional dwellings and khans have changed their functions and are housing such industries without essential change in their form. They are located in close proximity to, and in many cases are mixed with, residential mahallahs. This location increased the traffic volume in the central area which is characterized by its mass of narrow lanes, they were usually used by children as playgrounds.

On the other side this central location in Rusafah and Karkh enables a better distribution of employment to be achieved in relation to the areas from which employees are drawn, with a shortening

of journeys to work, as compared with a concentration of factories in a single large industrial complex.

Much industrial employment in Baghdad is provided by numerous small-scale workshops and repair establishments, scattered throughout the medieval part of Baghdad. Owing to their land requirements modern large firms have been forced to develop in the peripheral parts of Baghdad where ground prices are not prohibitive. Vehicular roads and the Tigris were another consideration in the choice of peripheral locations.

Many of the newly built, small metal workshops occurring in most of the residential areas were established along roads that have only recently been built or widened. They, together with many of the vehicle repair establishments, carry out their work or repairs along the main roads as they have no service room in front of their premises or adequate parking space. This is seen in Sheikh Omar, Sheikh Maruf, al-Nidhal, al-Kifah, al-Jumhuriyah Streets al-Waziriyah, al-Kadhimiyyah and other places (Fig. 8.17b).

The slow progress of industry has had various reasons. Considerable capital was in the hands of Jews who began to move to Palestine from 1937 on and so did not invest their money in long-term projects. Further, there was a lack of adequate power and transportation facilities. Also the illiteracy of a large number of Iraqi workers made it hard to train them for any skilled or technical job. Then there was the small size of the internal market, the low productivity of labour, and the narrow range of industrial raw materials with the exception of oil. The Development Board, on the other hand, failed to implement its programme when only one-sixth of the scheduled 17 per cent of the proposed fund was spent.⁶⁰ Yet the

latter is responsible for the establishment of al-Durah Refinery and other firms. During World War II a few industries made progress such as the manufacture of hand tools, produced from scrap metals, the tanning industry, and soap and glass production. After the war many Iraqi merchants turned to industry and began to invest their capital in industrial firms. They were encouraged by the establishment of the Industrial Bank in 1946.

In 1950 a new industrial act was issued offering more opportunities for the development of the nation's industry. It replaced the old act of 1929. The new act granted limited but generous exemptions from income tax and surtaxes and from customs duties, and provided government land free of rent for ten years. In 1951 more than 87 manufacturing firms benefitted from this act.⁶¹

In 1950 the Ministry of Economics established the Directorate General of Industry which has since began to carry responsibility for industrial improvement.⁶²

According to the 1954 Industrial Census, the first reliable one in the country's history, Baghdad Liwa differed from other Liwas in having the highest industrial income making up 59 per cent of the total of the country. This proves the different nature of industry in Baghdad Liwa in relation to other Liwas.

Reckoning the number of industrial workers per 1,000 inhabitants of every liwa, Basrah had the greatest relative number with 46 people employed per thousand population, Ramadi came next with 42 and Baghdad with 41. The Census discloses also that the big industries employing more than 50 people were mainly concentrated in the liwas of Baghdad and Basrah.

The greatest number of employed persons occurred in Baghdad Liwa, amounting to more than one third of the total number of persons employed in all Iraqi industries including the oil industries. The average number of workers per establishment varied considerably from liwa to liwa, being highest in Basrah (11.3 persons) and Baghdad Liwa (7.1 persons).

The industrial significance of Baghdad Liwa is shown in the table below.

Table 8.15: Industrial Statistics of Baghdad Liwa and Iraq (1954)

	No. of Estab- lish- ments	No. of Workers	Workers Per Est- ablish- ment Average	Annual Wages Bill I.D. s	Receipts Total I.D. s	Horse Power Gross	Value Machinery etc. I.D. s
B. Liwa	4,706	33,494	7.1	3,366,190	23,088,984	112,544	8,811,922
Iraq	22,460	90,291	4.0	5,756,024	39,198,098	195,821	15,657,963

Source: Principal Bureau of Statistics, Ministry of Economics. The Industrial Census of Iraq, 1954, Baghdad (1954).

Table 8.16: Industrial Workers per Liwa or Large Town and Size of Industry.

When?

<u>Liwa</u>	Industries employing 1 - 19 persons			Industries employing 20 - 49 persons	
	No. of Establish- ments	%	Total of Workers	No. of Establish- ments	Total of Workers
Mosul	2,456	11.1	6,663	6	163
Arbil	1,463	6.7	2,234	1	38
Sulaimaniyah	863	4.0	1,716	-	-
Kirkuk	1,323	6.0	3,274	3	106
Diyala	1,165	5.3	2,284	1	25
Baghdad	4,582	20.8	11,953	56	1,745
Karbala	2,086	9.3	4,868	2	75
Hillah	2,106	9.5	5,356	18	498
Kut	1,021	4.6	1,723	2	76
Amarah	1,346	6.0	2,046	16	370
Ramadi	1,062	4.8	2,899	2	59
Nassiriyah	883	4.0	1,928	-	-
Diwaniyah	671	2.8	1,581	3	80
Basrah	1,200	4.5	3,073	25	785
TOTAL	22,227		51,598	135	4,020
<u>Town</u>					
Greater Baghdad*	4,449		11,726	56	1,745
Basrah Centre**	765		2,167	15	471
Mosul City	1,930		5,575	6	163

Cont'd ...

* Including Karradah al-Sharqiyah, Kadhimiyyah and Adhamiyah.

** Old Rowm, Ashar and Margil.

Industries employing
50 - 99 persons

Industries employing
100 - 499 persons

Industries employing
500 or more persons

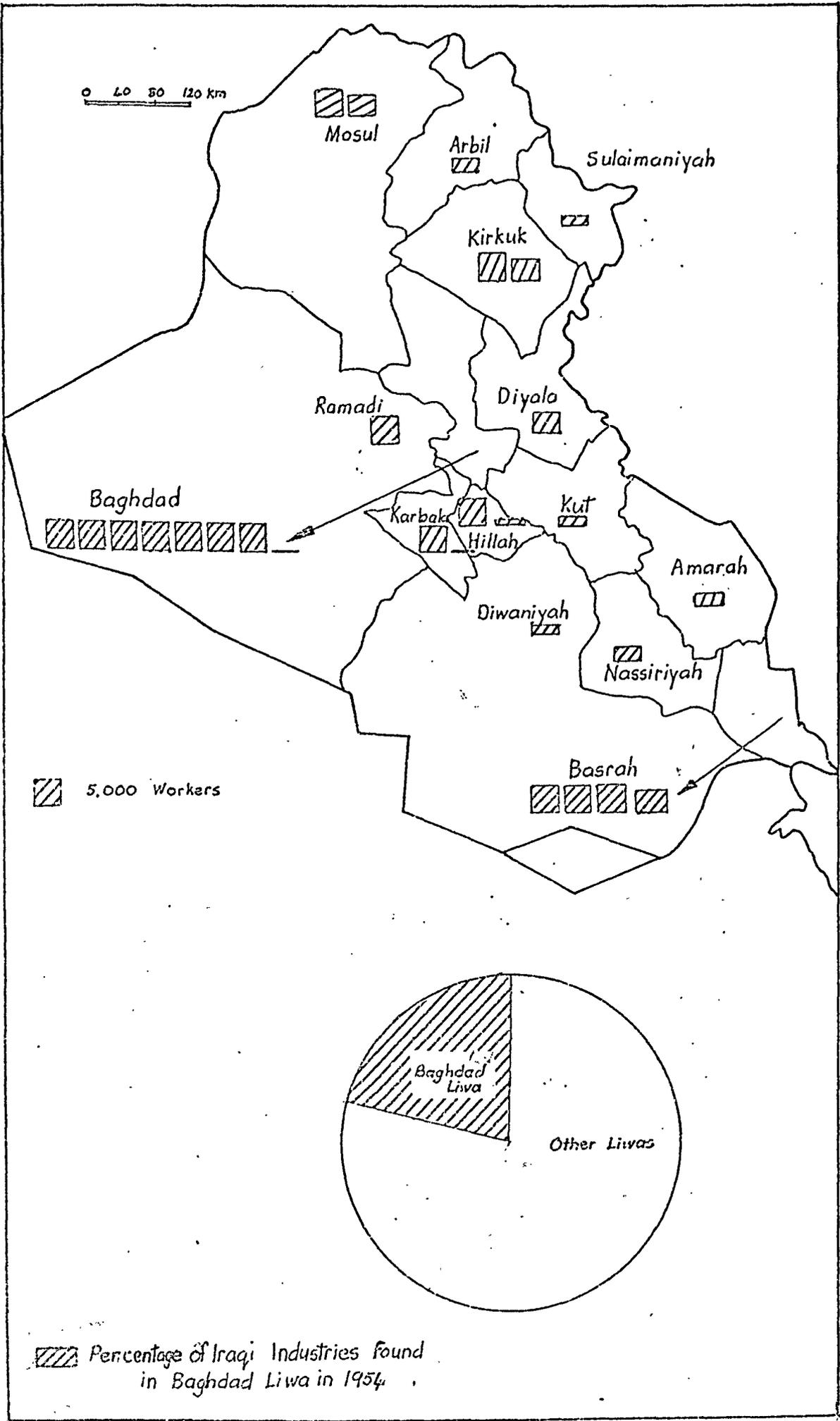
	No. of Establishments	Total of Workers	No. of Establishments	Total of Workers	No. of Establishments	Total of Workers
Mosul	2	138	6	1,068	-	-
Arbil	-	-	-	-	-	-
Sulaimaniyah	1	58	-	-	-	-
Kirkuk	2	147	-	-	-	-
Diyala	-	-	-	-	-	-
Baghdad	19	1,296	39	7,524	10	11,086
Karbala	2	184	-	-	-	-
Hillah	4	297	1	100	-	-
Kut	1	90	-	-	-	-
Amarah	1	52	-	-	-	-
Ramadi	2	132	2	280	1	837
Nassiriyah	-	-	2	517	-	-
Diwaniyah	2	105	1	200	-	-
Basrah	27	1,703	32	7,786	1	1,222
TOTAL	63	4,202	83	17,475	12	13,145
<u>Town</u>						
Greater Baghdad*	19	1,296	39	7,524	10	11,086
Basrah** Centre	6	386	22	5,605	1	1,222
Mosul City	2	138	6	1,068	-	-

Source: Principal Bureau of Statistics, Ministry of Economics, The Industrial Census of Iraq, 1954, Baghdad 1954.

* Including Karradah al-Sharqiyah, Kadhimiyyah and Adhamiyah.

** Old Rown, Ashar and Margil.

Fig. 8.21 The Distribution of Industrial Workers in Iraq, by Liwas, and Percentage of Industrial Establishments Found in Baghdad in 1954



Percentage of Iraqi Industries Found in Baghdad Liwa in 1954

Table 817: Classification of Liwas by Number of Industrial Workers*

Liwa	Population 1954	Industrial Workers (1954)	%	Industrial Workers per 1,000 Inhabitants
Mosul	571,052	9,203	8.7	16
Arbil	353,692	2,272	2.2	6
Sulaiman- iyah	373,176	1,774	1.7	5
Kirkuk	306,971	8,958	8.4	29
Diyala	244,508	3,581	4.4	16
Baghdad	861,926	35,183	33.4	41
Karbala	229,903	5,127	4.8	22
Hillah	179,659	6,211	5.8	35
Kut	234,789	1,889	1.8	8
Amarah	288,046	2,468	2.3	9
Ramadi	130,797	5,560	5.2	42
Nassiriyah	267,670	2,445	2.2	9
Diwanayah	302,867	1,966	1.8	6
Basrah	391,856	18,446	17.5	46
TOTAL	4,736,912	105,083		22

Source: Principal Bureau of Statistics, Ministry of Economics, The Industrial Census of Iraq, 1954, Baghdad 1954.

* Including workers in the oil industry.

Baghdad Liwa contained 4,706 industrial establishments, 4,582 of which employed less than 20 persons and were mostly of the smaller workshop type employing altogether 11,953. The remaining 124 were larger establishments; 56 of them each employing between 20 and 49 workers, 19 between 50 and 99, 39 between 100 and 499, and 10 over 500 workers (Fig. 8.21). The 124 large establishments together employed 21,651 workers. These establishments ranged from wool and

textile factories to small firms producing construction materials and the workshops of the state railways, followed in importance by food, drink, clothing, furniture manufacture, metallurgy and repair works.

As may be seen from the (tables 8.16 8.17), Baghdad had more than 20 per cent of the industrial establishments and 33 per cent of the industrially employed workers. The ratio of industrial workers per 1,000 inhabitants was 41 in Baghdad Liwa, while it was 46 in Basrah Liwa indicating that Baghdad came second in this respect.

However, Basrah acquired this status only because the oil industry was included, otherwise Baghdad would lead the country as it does in most activities.

Table 8.18: Large Industrial Establishments employing more than 20 workers in Baghdad 1957.

Type of Industry	No. of Establishments	No. of Employees	Percent of the Total Establishments	Percent of the Total Employees
Confectionery	5	209	7.8	42.6
Bakeries, flour industry, food production	5	203	1.5	11.9
Araq (local wine)	4	282	100.0	100.0
Tobacco & cigarettes	6	1,936	2.5	84.5
Spinning and weaving	20	4,653	18.9	92
Printing	8	422	12.7	56.6
Tanning	3	191	60	97
Soap and other chemical industries	7	724	30.4	84.5
Bricks	21	3,532	100.0	100.0
Tiles, ceramics	4	142	7.9	32.9
Cement and concrete	3	649	60	99
Welding	3	85	7.7	37.3
Metallurgy	4	430	0.8	25.3
Railway works	1	1,849	100.0	100.0
Car repairing	9	1,032	1.5	41.5
Construction	6	2,955	100.0	100.0
Electricity and Water Supply	4	1,592	100.0	100.0
Transport factoriss	1	80	100.0	100.0
Other Industries	2	55	1.9	15.9
Not classified	8	620	0.6	19.4
TOTAL	124			

Source: K. M. Langley, The Industrialization of Iraq, Harvard (1961)
Translated into Arabic by M.H. Al-Tai and K.S. al-Ani, Baghdad (1963) 149.

In Greater Baghdad 95 per cent of the workshops employed only 30 per cent of the industrial labour force, each establishment employing less than 10 persons. 50 per cent of the firms employed one worker each and 25 per cent employed two each. For Baghdad only 2.7 per cent of the industrial establishments employed more than 20 persons each. The number of these firms was 124 as shown in (Table 8.16).

According to the Census only 5 per cent of the total labour force of the country was engaged in industry, a fact reflecting the nature of the country's economy.⁶³

The dominance of the small-scale industries in Baghdad can be judged from its physiognomy, where both traditional and modern houses have managed to house a large variety of industries without essential change in their structures. Indeed, in Baghdad and most of the Arab towns, it is difficult to distinguish between the workshop and the house where both have the same plan and form. However, most of the small factories replaced the original owners who as has been mentioned, have forsaken their centrally located houses. The modern large industries on the other hand can be easily recognized both in terms of location i.e. on periphery, and forms where most of them are housed in buildings designed for such land use.

1. J. H. Lebon, The New Irrigation Era in Iraq, Economic Geography, 31 (1955) pp 47 - 59; A. Abdulmawjod, Highway Development in Iraq, Baghdad (1966) pp 2 - 4 (Mimeographed).
2. K. al-Midfai, Baghdad a Report on the Development, the Problems and the Structure of the City of Baghdad, Baghdad, (1961) 49 (Mimeographed).
3. H. V. Cooke, Challenge and Response in the Middle East, The Quest of Personality, New York (1952) 49; S. H. Longrigg, Iraq, 1900 to 1950, A Political, Social and Economic History, London (1953) pp 196, 365, 385.
4. International^{al} Bank for Reconstruction and Development, The Economic Development of Iraq, Report of a Mission Organized by the International Bank for Reconstruction and Development, at the request of the Government of Iraq, Baltimore (1952) 60.
5. M. M. al-Saiyad, Transportation in the Arab States, Arab League (1956) 41.
6. A. al-Hilali, Mujam al-Iraq, (Dictionary of Iraq), Beirut, 2 (1956) 76.
7. Naval Intelligence Division, Iraq and the Persian Gulf, Geographical HandBook, London (1944) 559.
8. Baghdad Commercial Chamber Magazine, 1951, p. 51, Europa Publication Ltd. The Middle East, Fourth Edition, London (1955) 126.
9. J. Gulic, Baghdad: Protrait of a City in Physical and Cultural Change, in the Recent Arab City Growth, ed. by Dr. S. G. Shiber, Kuwait (1967) 771, W. C. Fox, Baghdad, A City in Transition, The East Lakes Geographer, the Pre-Industrial City, Dec. 5 (1969) 15.

10. Personal Interview with the Directorate General of Confiscated Properties, Baghdad (1971).
11. H. Winsborough, City Growth and City Structure, Journal of Regional Science, 4, 2, (1962) 39.
12. H. H. Boesch, El-'Iraq, Economic Geography, 15, 4 (1939) 342.
13. J. H. Lebon, The Site and Modern Development of Baghdad, Bulletin de la Societe de Géographie d' Egypte, Tome xxix (1956) 8;
J. H. Lebon, Population Distribution and agricultural regions of Iraq, Geographical Review, 2 (1953) pp 223 - 228.
14. Minoprio, Spencely and P. W. MacFarlane, The Master Plan for the City of Baghdad, Report Presented in (1954) 3.
15. Doxiadis Associates, Housing, Problems, Policies, Programmes in Iraq, Report presented in July 1959, for the Development Board and Ministry of Development of the Government of Iraq, 7 vols, Vol. 3, Athenes, p. 2.
16. A. Susa, The Floods of Baghdad in History, Baghdad, 2 (1965) 580.
17. M. Darwish, M. Jawad and A. Susa, Dalil al-Jumhuriyah al-Iraqiyah (Directory of the Republic of Iraq) Baghdad (1960) 59.
18. Ministry of Economics, op. cit. p. 4.13.
19. Lebon, op. cit. (1953) pp. 223 - 228
20. Royal Institute of International Affairs, The Middle East. A Political and Economical Survey, second edition, London (1954) 355.
21. Gulic op. cit. 775.
22. M. M. Azceez, Migration from Amara Province, Iraq, 1955 - 1964, a thesis submitted for the degree of Doctor of Philosophy in the University of Durham, April (1968) 191.
23. T. J. Davis, Middle Class Housing in Central City, the Appraisal Journal, 34, (1966) p. 283.

24. T. al-Rawi, Baghdad, Madinat al-Salam, (Baghdad, The City of Peace) Baghdad, Iraq series 27 (1944).
25. Gulic, op. cit. 775 - 776.
26. Fox, op. cit. 14 - 15
27. Architectural Design, March (1954) pp. 74 - 75; Christian Science Monitor, Architects Build and Modern Baghdad, Ekistics, HIB-GA32, 2 (1958) 246.
28. S. G. Shiber, Al-Ilm Wa Takhtit al-Mudun al-Arabiyah, (The Science and Planning of Arab Cities) Beirut (1964) pp. 172 - 75.
29. S. al-Azzawi, Oriental Houses in Iraq, in Shelter and Society, Edited by P. Oliver, London: Barrie and Jenins (1969) 60.
30. Robert L. Woolley, Some Aspect of Heat Flow in Building with special references to summer conditions in Iraq, Bulletin of the College of Arts and Sciences, Baghdad, 2, (1957) 116.
31. Directorate General of Housing, Research and Statistical Section, A Study of the Housing Problem in Iraq, and how to handle it for the Period 1970 - 1990, Baghdad (1971) 2.
32. Directorate General of Housing op, cit. pp. 10, 27. S. F. Kattan, Appraisal of Neighbourhood Standards, Baghdad Master Plan, School of Planning and Architecture, New-Delhy (1968).
33. B. S. Hakim, Co-operative Housing Societies in Iraq, Ekistics 1969, March (1972) 166 - 167.
34. Amanat al-Asimah, personal interview, Baghdad (1971), A. Ahmad, Al-Harakah al-Taawuniyah Fi al-Iraq, (The Co-operative Movement in Iraq) Baghdad (1970) unpublished Report in the Directorate General of Co-operation, p. 3.
35. Directorate General of Housing, The Co-operative Housing, Miniographed Report, Baghdad (1970) 94; Directorate General of Housing, op. cit. (1970) 6.

36. Directorate General of Housing, personal interview (summer 1971).
37. Ministry of Economics, op. cit. (1956) 13.
38. G. L. Harris, Iraq, its People, its Society, its Culture, New Haven, (1958) 220.
39. International Bank for Reconstruction and Development, op. cit., 151,
40. Al-Dalil al-Tijari al-Iraqi (The Iraqi Commercial Guidance) Baghdad (1955/56) 96.
41. S. H. Longrigg, op. cit., , 257.
42. Longrigg, op. cit. 278
43. Longrigg, op. cit. 367
44. Gulic, op. cit. 772
45. Al-Rawi, op. cit. 96.
46. Adams, op. cit. 155.
47. International Bank for Reconstruction and Development, op. cit. 66, 131.
48. Royal Institute of International Affairs, op. cit. 272.
49. Susa, op. cit. (1960) 497.
50. International Bank for Reconstruction and Development, op. cit. 62 - 66.
51. Doxiadis Associates, op. cit., 5 (1959) 16.
52. Naval Intelligence Division, op. cit. 409.
53. Al-Hilali, op. cit. (1956) . 206, 217 - 218.
54. Marce Berger, Town Planning in the Arab World, Sponsored by the International Organization of Cultural Freedom and the Egyptian Engineering Society, Cairo (1960) 4.
55. Doxiadis, op. cit. (1956) 182.

56. M. R. G. Conzen, The Plan Analysis of an English City Centre, ed. in Proceedings of the I.G.U. Symposium in Urban Geography, Lund (1960) 392.
57. I. J. al-Alusi, Petrol in Iraq, Research No. 7, submitted to the Sixth Arab Engineering Conference, Baghdad, November 26 - December 2 (1955) 9. S. Numan, The Iraqi Industries, Research No. 12, submitted to the sixth Arab Engineering Conference, November 26 - December 2 (1955) pp. 7 - 10; M. H. Salman, The Economic Development in Iraq, 1864 - 1958, Beirut 1 (1965) 307.
58. Longrigg, op. cit. 372, Royal Institute of International Affairs, op. cit. pp. 82 - 83.
59. K. M. Langley, The Industrialization of Iraq, Harvard, 1961, Translated into Arabic by M. H. al-Tai and K. S. al-Ani, Baghdad (1963) 118.
60. G. L. Harris, Iraq, its People, its Society and its Culture, Now Haven (1958) pp. 58, 214; T. Baloc, The Economic Development of Iraq, Translated into Arabic by Dr. M. H. Salman, Baghdad (1958) 37.
61. S. al-Durrah, Al-Tatwur al-Sinai Fi al-Iraq (The Industrial Development of Iraq), Private Sector, Baghdad (1958) 40; Longrigg, op. cit. 321; Langley, op. cit. pp. 123, 134.
62. A. Hilali, op. cit. (1956) 221.
63. Ministry of Economics, Principal Bureau of Statistics, The Industrial Census of Iraq, 1954, Baghdad (1954) pp. 30, 40.

CHAPTER 9

Migration as an Aspect of Baghdad's Modern Development

Introduction:

Migration has been included in this part of the study because it has greatly influenced the townscape and the evolution and socio-economic structure of the city since World War II. To ignore migration is to ignore a major aspect in the cities of the Third World. About a third of the dwellings of Baghdad have been erected by migrants, influencing the character of the city considerably by large spontaneous accretions of sarifah (woven reed mat hut) and kukh (mud hut) structures both inside and outside the fixation lines of the fringe belt.

The development of such illegal constructions came into being by filling as well as external accretionary processes, resulting in scattered, clustered and huge colonized shanty settlements.

This chapter attempts to determine how far Baghdad has been "ruralized" as a result of the gradual and successive waves of fallahin migrants. Previous studies have dealt with the problem without specific analysis of their influence on the physiognomy of Baghdad or other cities.

No morphological analysis of a town such as Baghdad would be complete without some reference to the blight of the kukh and sarifah encampments of migrants or to the permanent settlements for migrants built later.

Iraq has its own type of migration which differs even from the other Middle Eastern countries. Social traditions continue to be a major determinant in both the locational and structural pattern of migrants' areas in Baghdad. Migrants are living in the capital but without assimilating an urban way of life. This has made Baghdad a community with both urban and rural facets.

Historical Trends:

In the absence of regular and accurate censuses, the figures given on migration are estimates only. Governmental censuses have not considered internal migration trends. Census offices have information only for movement into and out of the country as a whole, and therefore there are no data on the exact nature and volume of internal changes. As emigration is very limited in Iraq the discussion will deal with internal migration only, its trends, causes and results.

Rural-to-urban migration, the dominant type in Iraq, goes back to the time after the First World War and is of two kinds, migration between liwas irrespective of whether the origin of the migrants was rural or urban, and rural-to-urban migration.

Migration is considered as a major factor influencing both the distribution of population and its demographic characteristics.

The development of migration in Baghdad can be traced in three distinct phases, i.e. pre-1947, 1947-1963 and post-1963 (Fig. 9.1). The first period marks the beginning of migration, the second witnesses its climax, while the third represents its decline.

The establishment of the national police and army in 1918 and 1920* was a major cause of the initial trend. The majority of people for these two institutions were recruited from the rural areas, and when they had been trained professionally, they tended to settle in Baghdad and other major towns with their families and often some of their relatives as well since they could easily find jobs there.

In the 1930's and because of the economic growth and relative attractiveness of Baghdad and other major towns, the tempo of migration quickened. The Second World War and economic development have

* The Conscription Act was passed in 1935†

accelerated such movement.

During this period sheikhs became involved more in economic i.e. commercial and industrial activities in the main towns, which in turn added to the already bad relations between them and their fallahin tribesmen, which in turn led to the flight of more fallahin.

The involvement of Sheikhs in commercial and industrial activities resulted in increased absentee landlordism, sheikhs appointing their sirkals (agents) to run their agricultural affairs in the countryside. Standing between tenant and landowner, the sirkals misused their authority and tried to get as much as possible from the land. Instead of paying to the sheikh only, fallahin now had to pay the sirkals as well.

According to Jawad, however, industrial development after the 1930's was the main reason for this migration. He states that the majority of the sarifah dwellers were employed in the industrial establishments of Baghdad. No statistical information was available about this aspect, though by the 1950's no less than 57 per cent of the industrial workers of Baghdad were found to be squatter migrants (muhajirin).²

If one examines the first census of Iraq, held in 1947, an obvious trend towards migration between liwas can be observed. From (Table 9.1) it appears that Baghdad Liwa had the greatest net in-migration in that year. 22 per cent of the population living in Baghdad *Liwa* were born outside it, whereas 7 per cent only of the people born in Baghdad Liwa had moved away. This reflects the wide opportunities and better conditions found in the capital.

Table 9.1: The Internal migration (Liwa of birth and residence) in 1947 (Foreigners and nomads excluded):

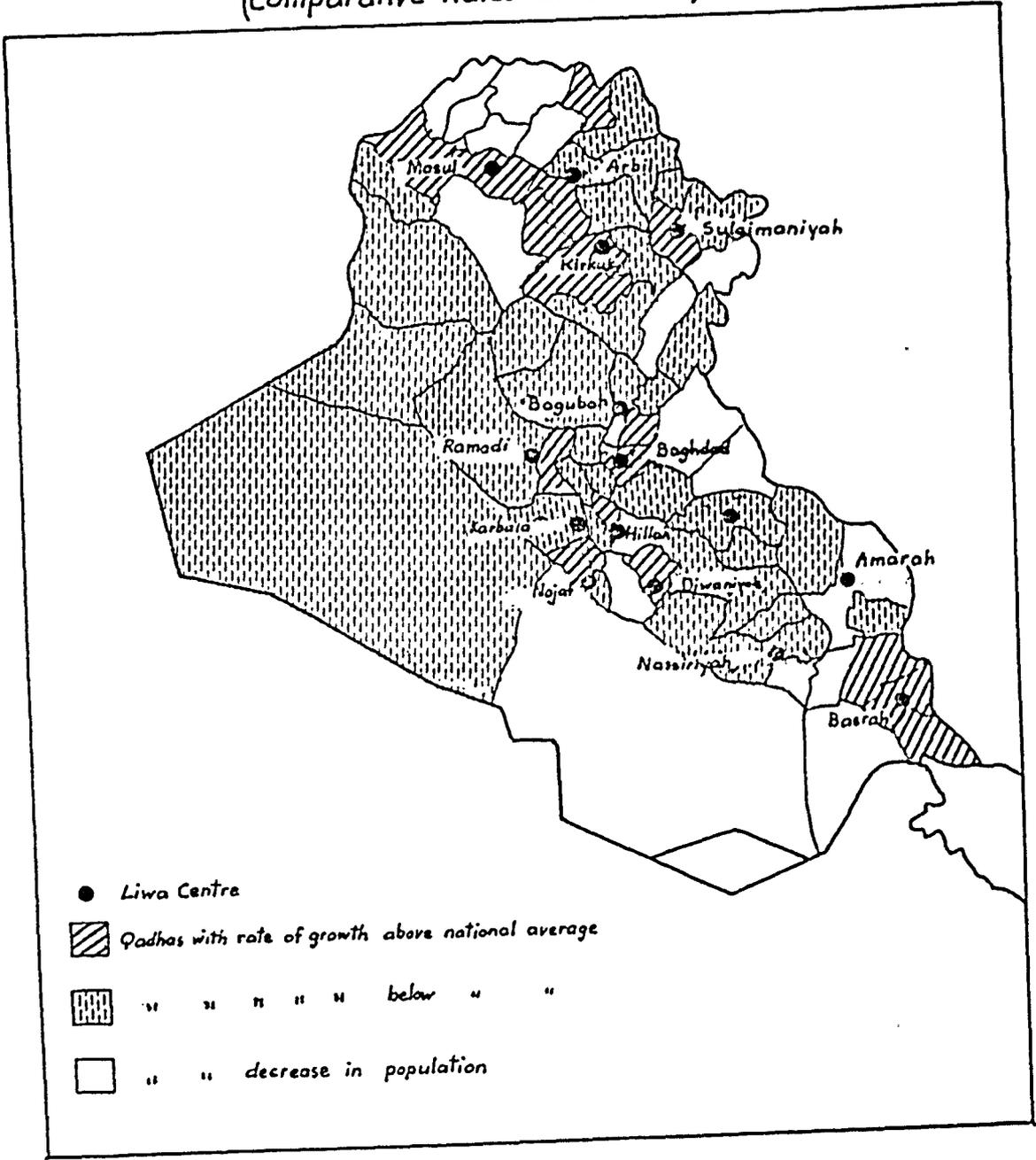
Liwa	Citizens of Iraq living in Liwa	No. born in Liwa of residence	No. born outside Liwa of residence	Percent of Residents born outside	No. born in Liwa irrespective of residence	No. born in Liwa and living outside it	Percent of people born in Liwa but living outside it
Mosul	523,713	505,183	18,530	3.5	535,978	30,795	5.7
Arbil	239,575	22,907	10,568	4.4	237,588	8,581	3.6
Sulaimaniyah	226,322	220,531	5,791	2.6	229,967	9,436	4.1
Kirkuk	284,998	261,952	23,046	8.1	282,820	20,868	7.4
Diyala	271,908	249,635	22,273	8.2	274,673	25,038	9.1
Baghdad	788,001	614,680	182,000(a)	22.0	660,927	46,247	7.1
Ramadi	164,280	149,082	15,198	9.3	165,394	16,312	9.9
Karbala	127,594	116,441	11,153	8.7	134,431	17,990	13.4
Hillah	260,777	245,824	14,953	5.7	275,656	29,832	10.8
Kut	223,577	195,457	28,120	12.7	223,237	27,780	12.4
Diwaniyah	377,849	359,934	17,915	4.7	381,867	21,933	5.9
Nassiriyah	341,741	333,067	8,674	2.5	358,017	24,950	7.0
Amarah	306,235	295,480	10,755	3.5	396,722	101,242	25.5
Basrah	255,787	296,779	89,008(b)	16.6	307,997	11,218	3.6
Unknown Outside Iraq					4,484 22,599	4,484 22,599	
Total	4,392,357	3,886,952	457,984	—	4,492,357	419,305	

D. G. Adams, Current Population trends in Iraq, Middle East Journal, 10, 2 (1956) 59.

(a) 53,973 persons of these came from Amarah Liwa.

(b) 28,446 persons of these came from Amarah Liwa.

Fig. 9.2 Movement of Population Between Iraqi Qadhas, 1957-1965
(Comparative Rates of Growth)



The four southern liwas where the 'fendal' system dominated, stood out from the other regions as the source of fallahin migrants. More than 40 per cent of the people born in the southern liwas were living outside their native areas. Amarah Liwa alone was and still is the major source of migrants to Baghdad and Basrah. 81 per cent of the 101,242 Amarah migrants were living in the liwas of Baghdad and Basrah. This, has led to the rapid and unnatural expansion of both cities during the 1950's.

It is possible to trace the source of migrants by a regional comparison of the rates of population growth. In the period 1957 - 1965, there were 54 qadhas with a rate of growth less than the average rate of growth of the population; in 17 of these (24.6 per cent) the population decreased during this period. Presumably these qadhas were the main sources of migration to Baghdad. Fig. 9.2 is based on the differences in growth rate of Iraqi qadhas.

The government had in fact contributed to the early waves of migration when a new agricultural law was passed in 1933, empowering the landowner to keep the fallah on his land as long as the latter was in debt to him, the fallah working with his family not for a fixed wage but for a share of the crop. The portion of the crop retained by the fallah varied widely from one eighth to one third and the amount of land cultivated by each also varied from 50,000 - 58,000 sq.m.³

Almost all migrants in Baghdad settled on vacant unfenced lots in the residential areas and on the outskirts of the city, with practically no sanitary facilities. Thus, the city began to undergo a physical change owing to sarifah and kukh accretions, filling in the built-up area and extending it along the fringe belt (Fig. 9.1)

In every case the first shanty settlements snowballed as relatives followed those who had already moved to the city.

The age distribution in Baghdad in 1947 gives some indication of migration to the city. The general sex ratio was 1092, and in ages 10-59 this ratio was 1123. At the same time 65 per cent of all males were in the age group 10 - 59, the corresponding percentage in the whole country being then 55.⁴

A number of studies have touched upon the theme of fallahin migration, mostly in the 1950's, but there is a considerable discrepancy between their estimates of the number of people involved, figures ranging from 60,000 to 120,000.*

It seems remarkable for an aspect of city life that has such far-reaching impact on the character of the economy not to be covered by accurate statistics.

In 1957, the percentage of population living in Baghdad Liwa but born outside increased to 35, and in Basrah to 21, while it ranged from 6 - 14 in the other liwas. This indicates that city-ward migration had increased especially towards Baghdad.

* In 1951 the International Mission estimated the total number of fallahin migrants living in kukhs and sarifahs in Baghdad City at 60,000.² Wirth in 1953, put the number at between 60,000 - 10,000.⁶ Whilst al-Midfair also in the 1950's put it at 125,000.⁷ In 1954/55 Minoprio and associates estimated the number of migrants to Baghdad, as 107,025⁸ with 80 per cent of them originating from Alarah Liwa.⁹ The Bureau of Statistics reported that in 1956 there were 92,000 migrants inhabiting 16,413 sarifahs and kukhs, whereas the Ministry of the Interior had put the number at 120,000. Al-Hilali put the total number of migrants during the period 1947-1957 at 330,000 people out of which 159,000 migrants were in Baghdad. The migration volume from Amarah Liwa towards Baghdad was estimated at the rate of a full cargo of ten lorries per day.¹⁰ But the Directorate General of Civil Affairs, the department responsible for population affairs, put the number of migrants in sarifah and kukh shanty towns at 109,038.¹¹ M.Azeez on the other hand put the migrant volume at 85,000¹² in the period 1947-1956. D. Warriner put the number of sarifah dwellers at 40,000 in 1955 and Philips at 34,000 in 1957.¹³

Now it is possible to trace the average migration between liwas, using the statistics available for the censuses of 1947 and 1957. Perhaps a meaningful result can be achieved concerning the annual average migration between Iraqi Liwas as shown in (Table 9.2). The results for each liwa were calculated by using the equation $Y = S_1 - S_0 + M$, where S_1 denotes the number of migrants living in a liwa in 1957, S_0 the number living in the same liwa in 1947, M the number of migrants dying between 1947 and 1957 and Y the net increase of migrants.

Table 9.2: Net Annual Increase of Migrants in the Iraqi Liwas

Mosul	+340
Sulainaniyah	+2400
Arbil	-260
Kirkuk	+750
Diyala	-1870
Ranadi	-380
Baghdad	+25000
Kut	-4110
Hillah	-860
Karbala	-900
Diwanaiyah	-3160
Amarah	-22000
N assiriyah	-6760
Basrah	+3500

According to Doxiadis in 1957, there were 2,400,000 people living in sarifah dwellings in Iraq. This represents 37 per cent of the whole population of the country. Baghdad Liwa had 12 per cent of the total number of sarifah dwellers. Doxiadis estimated that more than 300,000 i.e. 35 per cent of the population of Baghdad were living in sarifah dwellings. It was assumed that 73 per cent of those migrants came from Amarah Liwa alone, 10.3 per cent from Kut Liwa, 4 per cent from Hillah Liwa, another 4 per cent from Nassiriyah Liwa and the

Fig. 9.4 Locational Pattern of Sarifah Shanty Towns in Baghdad (1956)

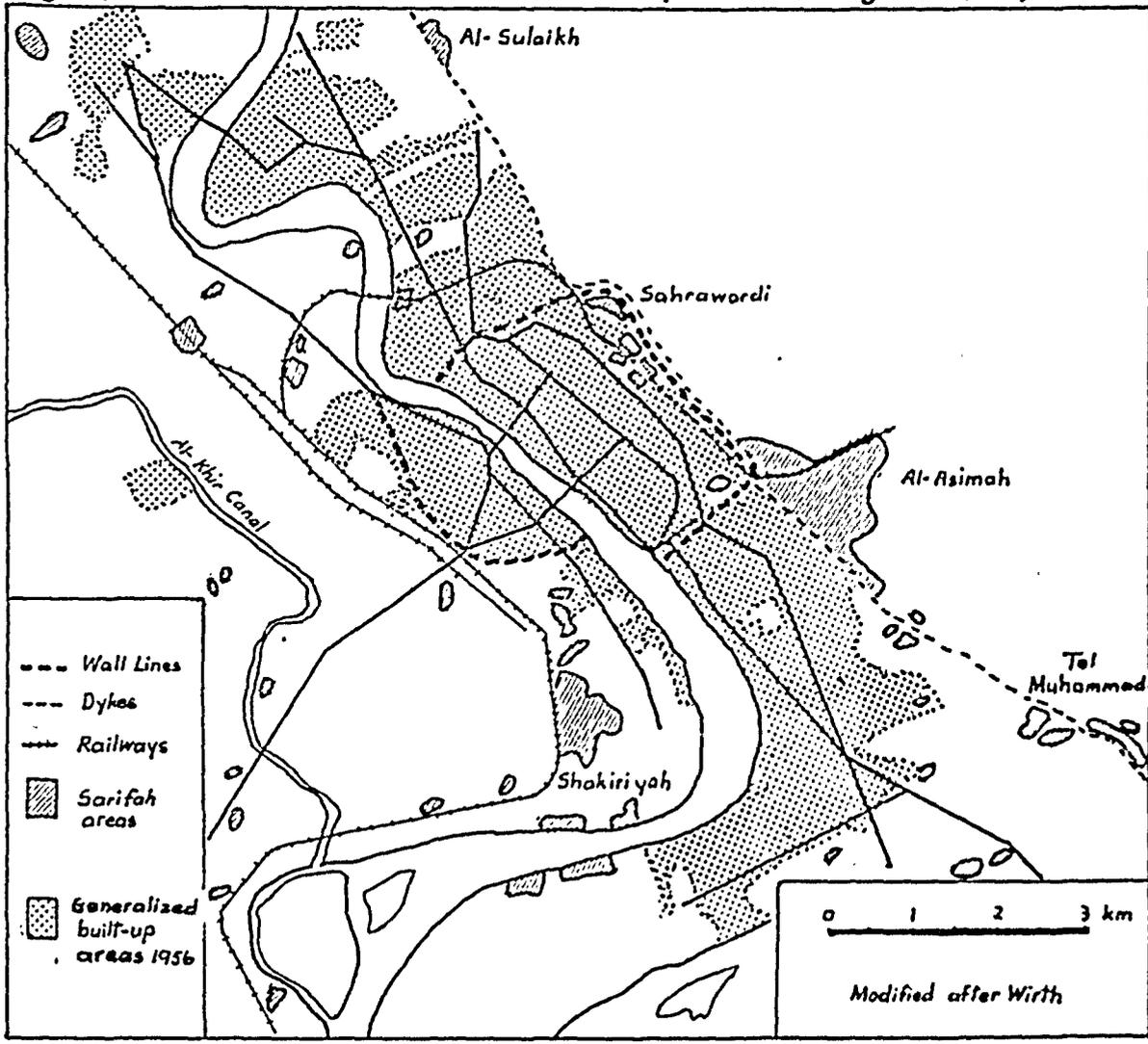
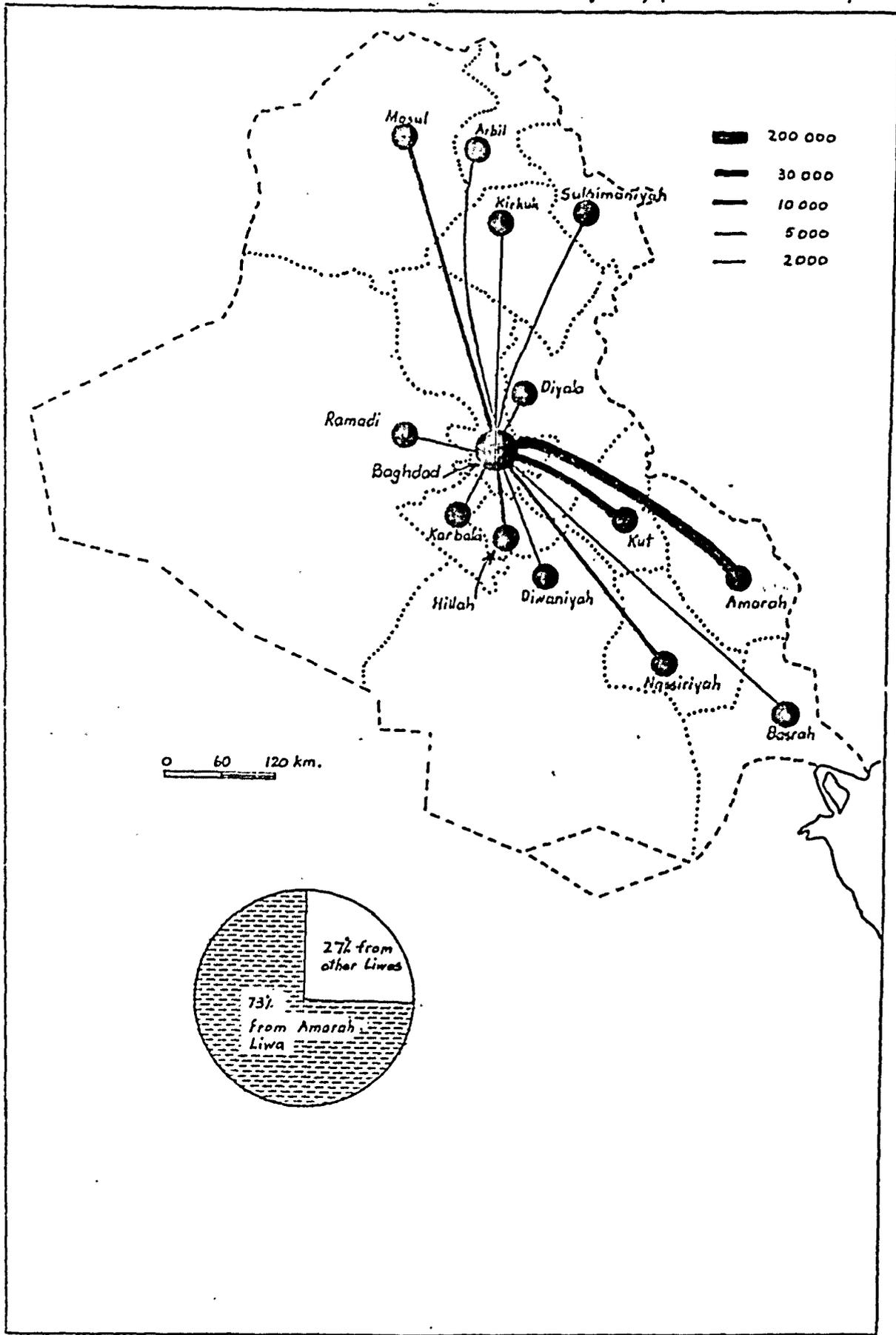


Fig.9.3 Migration to Baghdad from other Liwas (1957) (Modified after M.Azeez)



remaining 8.5 per cent from other liwas¹⁴ (Fig. 9.3). This indicates that Amarah Liwa continued as the most depressed rural area in Iraq. Baali in fact gave the percentage from Amarah Liwa as 75.¹⁵

According to the 1957 census (Table 9.3) there were more than 320,000 migrants in Baghdad Liwa, representing 25.2 per cent of the whole population of the liwa which was more than 1,313,000.

Table 9.3: Population distribution according to place of birth in Baghdad, Basrah and Kirkuk (1957):

Liwa	Total No. of population in (000)	Population born in liwa of Residence in (000)	Population born outside liwa of residence in (000)	% of migrants
Baghdad	1,313	981	332	25.2
Basrah	503	440	62	12.5
Kirkuk	389	377	12	3.0

Source: Dr. M. H. Salman, *The Economic Development of Iraq, 1864 - 1958*, Beirut, 1 (1965) 75.

This large number of migrants has been housed in sarifah and kukh shanties extending along the eastern fixation line (Eastern Dyke), with substantial concentrations in some of the more advantageous sites, the most attractive areas lying along or near to ^{the} medieval wall of Baghdad, not far from the centre (Fig. 9.4).

In 1956, the Principal Bureau of Statistics, Ministry of Economics, carried out the first housing census in Iraq. Table 9.4., based on it, shows the spatial distribution of sarifahs in the Baghdad area, which does not, however, coincide with the Amanat al-Asimah boundaries. It shows that the highest number of sarifahs were on the East Side. The table also reveals that the sarifahs were generally situated on the

outskirts of the city. The number of rented sarifahs was very small, less than 3,000.

A strange feature of the census was that it showed females outnumbering males in all the settlements. However, this does not give a true picture as migrants used to underreport their males to avoid military service.

Table 9.4: Distribution of sarifahs in Baghdad area 1956 (Fig. 9.4)

Locality	No. of Sari-fahs	Number of			Total Popu-lation	Owned Sari-fahs	Rented Sari-fahs	No. of Sari-fahs supplied with el-ectricity
		Famil-ies	Males	Females				
Rusafah and Karkh (Old Town)	1,235	1,252	3,219	3,583	6,804	775	460	10
Karradah Centre	5,744	5,894	14,196	17,354	31,550	5,610	143	11
Baghdad al. Jadidah and Tol-Muhammad	1,215	1,228	3,016	3,585	6,601	1,210	5	-
Villages of Karra-dah al-Sharqiyah	698	712	1,671	2,190	3,861	697	1	1
Adhamiyah Centre	3,455	3,722	9,321	10,890	20,216	2,586	869	11
Villages of Adhami-yah	374	374	900	1,600	1,960	373	-	2
Kadhimiyyah Centre	850	868	2,200	2,497	4,697	580	270	4
Villages of Kadhimiyyah	1,335	1,476	3,558	480	7,838	1,312	14	1
Durah	1,507	1,532	4,062	4,644	8,646	480	1,027	1
TOTAL	16,413	17,058	42,143	46,823	92,173	13,623	2,789	41

Source: Central Bureau of Statistics, Ministry of Economics, Report on the Housing Consus of Iraq 1956 Baghdad (1956) pp 12,20.

The average number of families per sarifah was 1.04, while the average number of persons per sarifah was 5.5¹⁶. By the end of 1960 the sarifahs of Baghdad had grown to 44,000 i.e. nearly 45 per cent of the total houses of the city. Their inhabitants were estimated at 250,000, or more than a quarter of the population of the city.¹⁷ In 1962, the colossal momentum of migration was inescapable, as the number of migrant families shot up to more than 90,000¹⁸ thus enlarging the shanty towns, occupying large tracts of vacant land both publicly and privately owned. The increase of fallahin migrants has resulted in both the growth of earlier shanty towns and the creation of new ones. The old nuclei have doubled or even tripled in size. Al-Shakriyah on the West Side and al-Asimah on the East Side are examples of this (Fig. 9.1)

The stream of migrants has continued since 1963, but at a lower rate as new restrictions were applied against further rural-to-urban migration. The total number of migrants reported by the Directorate General of Civil Affairs for the period 1962-1968 was more than 81,460 with an annual average of more than 11,600.¹⁹

It is important to remember, however, that all available figures put together still do not give a complete picture of migration from rural to urban areas, as they supply information about migration between liwas rather than to towns. Furthermore, the figures do not go beyond 1957 as the 1965 results have not been published yet.

In the absence of such data one can only compare the general growth of the urban and rural population based on the general average growth of each. Emigration, as already mentioned, is negligible. One can assume that the rate of growth in the rural areas is almost equal to that of urban areas. This is because the higher birth rate in the rural areas is accompanied by a higher death rate. Thus

an equivalent rate of growth is maintained. Therefore by studying the growth trends of urban population one can assume that the rural-to-urban migration was on a limited scale for the period prior to 1947, as the urban growth was slow. At the beginning of this century the percentage of the population living in urban areas was 23 per cent and increased to 32 per cent in 1947, while in the following decade it jumped to 39. This means that the urban growth in this decade was five times that of the first half of the century. On this basis one can recognize the change in the volume of rural-to-urban migration. Table 9.5 reflects this trend perhaps more accurately than the official statistics, if it is correct to assume that the difference between the growth rates is derived basically as a result of the imbalance of population distribution owing to migration. One can observe the following features: The immigration in 1947 - 1957 was obvious as the rate of urban growth was 10 per cent more than the growth rate of the total population in Iraq. In a regional context the highest rate of growth is seen in the central region, and particularly in Baghdad Liwa. The rate of growth of the northern and southern liwas was lower than the rate of the growth of the population of the country. Presumably migration between the rural and urban areas of these liwas was very limited in the north and south, and it may be said that a considerable volume of migration from both the rural and urban area of these liwas to towns in other liwas, was taking place.

Table 9.5: The general growth of the population of Iraq; compared with the general growth of the urban population. 1947 - 1965 (in 000)

Region	No. of total population			Urban Population			% of growth 1947-57		% of growth 1957 - 65	
	1947	1957	1965	1947	1957	1965	Total Pop.	Urban Pop.	Total Pop.	Urban Pop.
Iraq	4,826	6,340	8,262	1,720	2,425	3,647	331.3	141.0	130.3	150.4
Northern Liwas	1,347	1,723	2,185	462	557	879	127.9	120.6	126.8	157.5
Central Liwas	2,431	3,284	4,516	891	1,463	2,064	135.1	164.2	137.5	141.1
Baghdad Liwa	817	1,313	2,124	424	856	1,308	160.7	101.9	161.8	152.9
Southern Liwas	1,047	1,292	1,520	367	405	663	123.4	110.3	170.8	163.7

Source: Directorate General of Civil Affairs, Censuses of 1947, 1957 and 1965.

The net average migration as shown in the above table demonstrates that the movements within the northern liwas was low compared with the central and southern liwas. Reference to Table 9.2 appears to indicate that the liwas which grow most in population owing to this migration were respectively Baghdad, Basrah, Kirkuk and Mosul. Amarah Liwa, however, was the source of the majority of migrants.

From Table 9.5 it appears that the rate of urban growth was faster in the period 1957 - 1965 than in the previous period, which enables us to assume that the volume of migration has increased in this period. Furthermore, the percentage of urban growth increased in almost all regions, which indicates a change in the direction of migration. Instead of migrating only to the capital, some have migrated to other towns. Although there is no information about the place of birth in

the census of 1965, one can predict that the same major trends will be seen in the patterns of the internal migration, in the period 1957-1965, as in the preceding period:

- (a) within the boundaries of the same liwa, towards its centre or major town,
- (b) within the same region; from one liwa to another, and
- (c) from all liwas to Baghdad.

Apart from Baghdad, the main targets of all kinds of migrants are Basrah, the oil centre and port of the country, Mosul, the economic capital of the north, Sulaimaniyah the major market centre of the Kurdish areas and the religious towns of Karbala, Najaf, Samarra and Kadhimiyah (Baghdad). Kirkuk is another town near the northern oilfields which attracts migrants.

Motives for Migration:

To understand the sarifah and kukh problem one has to deal with its causes, consequences on the socio-functional and physical structure of the city. The analysis will be brief as it is beyond the scope of this work. The fallah's miserable life was the major factor in his flight towards urban centres. As the International Mission found, he was living at a very low economic and nutritional standard. The fallah who cultivates 25 donums (15.5 acres) of winter crops annually, (this was probably above the average), would produce 30 kg. on average. The total crop on 25 donums would then be 7.5 tons. Of this the fallah would probably get two fifths or three tons as his share (as already mentioned it varied widely,) out of which he had to retain seed for the next year and to pay for some help with the threshing and harvesting, in all amounting to one half to one ton more. His family might consist of five or six people, including himself, his wife and

children, and one or two other relatives, such as his parents or unmarried sister. The minimum retained for food would be one ton, in practice it was more. He would thus have little more than one ton left to sell and he might even have to keep part of this for his draft animals, if they are unable to find enough stubble and other natural fodder. With the reduction of istihlak (consumption) tax, transport etc. costs, he would sell his share at 20 I.D. per ton, but many fallahin undoubtedly sold their expected production in advance. Thus 10 I.D. for the winter crop and perhaps another 10 I.D. for the small summer crop would constitute his total cash income for the year,²⁰ and this would be spent mainly on food, clothing and possibly some low-quality tobacco. Sugar and tea are especially important food items.

In many cases the fallah has had to pay the demands of one or more intermediaries who stand²¹ between the tenant and the landowner as sub-lessees and bailiffs.

The migrant in Baghdad on the other hand can without difficulty get a monthly income of more than the annual income of his fellow tribesmen, in al-qariyah (the village). The average monthly income per family among the families interviewed ~~interviewed~~ by the writer in al-Thawrah was 28.4 I.D. From the above it is clear why the fallahin were always liable to sink deeper into debt to their landlords, who frequently became absentee landlords after the Second World War. Through this process the landlords were able to hold their fallahin virtually as slaves. The landlord, 'mallak' in fact was in a position to force the fallah to borrow from him and from no other money lender. He could also force the cultivator to vote for him when he stood for a seat in 'parliament'. After independence the conditions of the fallahin was much worse than during the Ottoman occupation, when a large part of the

rural income was distributed equitably within the tribal communities.

Thus when fallahin predictably fled to Baghdad and other towns, they found themselves in a new context almost completely safe from the grasp of their former sheikhs. In Iraq, therefore, it is still true to say 'Town air makes one free'.²²

The sarifah and kulch settlements in Baghdad were similar to the dwellings the migrants had left. They came to be very different from slums in the European sense. In Baghdad sarifahs are the first step in the social elevation of their inhabitants. It is true that sarifah dwellers live, even today, in conditions that are below the minimum European standards, but the conditions under their tribal chieftans from whom they had fled were nearly always worse. Fallahin migrants in Baghdad had a more human existence than in their state of semi-slavery in the rural areas.

The wretched health situation in the southern parts of the country was recognised by Quint, when he reported that 95 per cent of the villagers had had at least one endemic disease, 80 per cent two and 60 per cent at least three. Parasites such as schistosomiasis, and onclystoma, ascaries, and amoeba infested the fallahin. Tuberculosis of the lungs and the bones was common. Bajal (a form of yaws) was also prevalent.²³ This was coupled with the lack of all kinds of health and medical services. Baghdad unjustly monopolised such amenities. In 1950 for example, Baghdad had 30 hospitals with 1,988 beds, 56 dispensaries, 419 doctors, whereas Amarah, the main source of migration had 5 hospitals with only 353 beds and 20 doctors.²⁴ In 1955 of the 93 private chemists' shops in Iraq, 91 were in Baghdad, also Baghdad had 57 per cent of the country's 189 pharmacies.²⁵ This is still the case and in 1958 for example, Baghdad had 61 per cent of the

public hospitals and 22 per cent of the private hospitals of the country, whereas by 1967 the figures were 49 hospitals in Baghdad Liwa and 21 in Amarah.²⁶

Some villages in the south are situated at least eight hours from the nearest doctor and usually the fallah could not afford the transport.

The same factors applied to educational opportunities. There was virtually no literacy in the southern rural areas of Iraq, and yet occasionally the government distributes leaflets to improve methods of cultivation. In the majority of cases the big landowners have resisted establishing schools on their land. Baghdad also dominated the country in this aspect of life. In 1956 for example, Baghdad had 3,000 teachers out of the 7,000 in the country, and had also more than half of the primary schools.²⁷

However, poverty in the rural areas affects the educational standard of the fallahin. Most of the fallahin cannot afford to send their children to schools, for they are considered economic assets in that they help to till the land.

There is general agreement that the migration rate is closely linked to the expansion of the nation's industries, (i.e. increase in employment) during the growth period ²⁸. This is true in Iraq too, though the rate of industrialization was far less than that of migration and in fact, migration started well ahead of the date of the introduction of modern industrialisation into the country. The relationship between the two, as already indicated, may be appreciated when one realises that 57 per cent of the labour force of Baghdad's factories in 1957 was reported to be composed of migrants from the south.

The land tenure system at the time was another major factor behind the cityward exodus from the countryside. Fallahin, are almost exclusively tribal people, organised under the rules of their sheikhs. The sheikhs were able to register land in their own names thus reducing the fallahin tribesmen to mere sharecroppers. Through its antiquated laws the government either supported these conditions or applied a laissezfaire policy before 1958.*

Thus sheikhs, few in number, became almost the sole owners and masters of the agricultural part of southern Iraq. In Amarah Liwa for example, under this share tenancy system, 13377 km² of land were owned by only 483 landholders, while the other fallahin were landless and thus became agricultural labourers.²⁹

The agricultural-livestock census of 1952-53, carried out by the Statistics Department of the Ministry of Economics, disclosed the following information:

Table 9.6: Frequency of agricultural holdings in Iraq 1952/53.

Percent of landowners	Size of agricultural holdings (donums)	Holdings as p.c. of total agricl. land.
1.460	from 1 - less than 100	9
0.452	from 100 - less than 1,000	31
0.510	from 1000 - less than 10,000	40
0.004	more than 10,000	20

Source: Principal Statistical Organization, Ministry of Economics, Results of the Agricultural and Livestock Census in Iraq, 1958/1959, Baghdad (1961) pp 6,311.

* There were many backward laws such as the law of the tribal judicial system of 1928.

From the above it is obvious that Iraq was a country where the majority of the population were landless. 60 per cent of the agricultural holdings were owned by only 1 per cent of the landholders, and each owned a holding of not less than 1,00 donums.

According to the census, more than 98 per cent of the population of Iraq had no land. The prevalence of feudalism was more striking in Amarah Liwa where the average size of agricultural holdings was 4,260 acres, against the average of 126 for the country as a whole.³⁰

Peasants who owned small holdings, a very small percentage, were confronted with problems, such as inadequate methods of cultivation, lack of water for irrigation purposes and inadequate availability of agricultural credit. It is true, as Baali realised, that the townward movement of fallahin, particularly to Baghdad, is not directly caused by urbanization or industrialization but rather by the rural situation discussed.³¹

On the 30th September 1958, an agrarian reform was declared. Unfortunately, it failed to curtail the migration movement for various social, technological, economic, administrative and political reasons. The confiscation and re-distribution of land was very slow, and even then did not continue at an even rate.* This can be seen in the fact that the highest flood of fallahin migrants flocked to Baghdad after 1959, following the rumours which accompanied the revolution, that houses of splendid types, and better opportunities would be provided for the sarifah and kukh dwellers.³³

* In 1960, for example, while a third of the fixed period had passed, only one sixth of the supposedly confiscated land had been confiscated.³²

Political dissen'sion among fallahin also operated to bring about migration, especially after the 1958 revolution. For example, fallahin of different political ideologies were involved in bloody clashes in which many were killed and wounded. Such incidents forced many fallahin to seek refuge in Baghdad and the other major towns.³⁴

The flood of 1954, which swept most of the arable areas of the southern liwas, caused widespread damage to crops and property. A considerable but uncounted number of kukhs and sarifahs were destroyed, thus leaving fallahin homeless and in turn creating a sudden wave of migration.

After 1950, the transportation system of the country improved considerably, especially after the establishment of the Development Board. This has made the fallahin more mobile, facilitated the intercourse between rural and urban areas, and made the towns even more attractive to the fallahin.

The dominant tribal disputes which in many cases led to fighting between different tribes, sometimes lasting several days, ^{were} ~~was~~ another motive in encouraging migration. With the absence of police or other governmental forces, tribal fighting or retaliation was a frequent occurrence. Relatives living in Baghdad's shanty towns also contributed to migration by describing their wretched life as a paradise to their relatives in the home villages. They told them, that ^e freedom in choosing one's work and way of life, recreational facilities, and 'high' incomes were all found in Baghdad. Consequently relatives came to the capital, living with the earlier squatters for a time. When they found jobs, they built their own sarifah, near their relatives who usually grouped themselves in certain settlements, adding thus to the ruralization process taking place in Baghdad.

From the families interviewed by the writer in al-Thawrah, it was found that the main motives for migration among the migrants were economic, social, health reasons and family ties. More than 75 per cent of them moved to Baghdad seeking better payment while about a quarter of them came for other reasons.

Table 9.7: Motives for Migration among Interviewees in al-Thawrah.

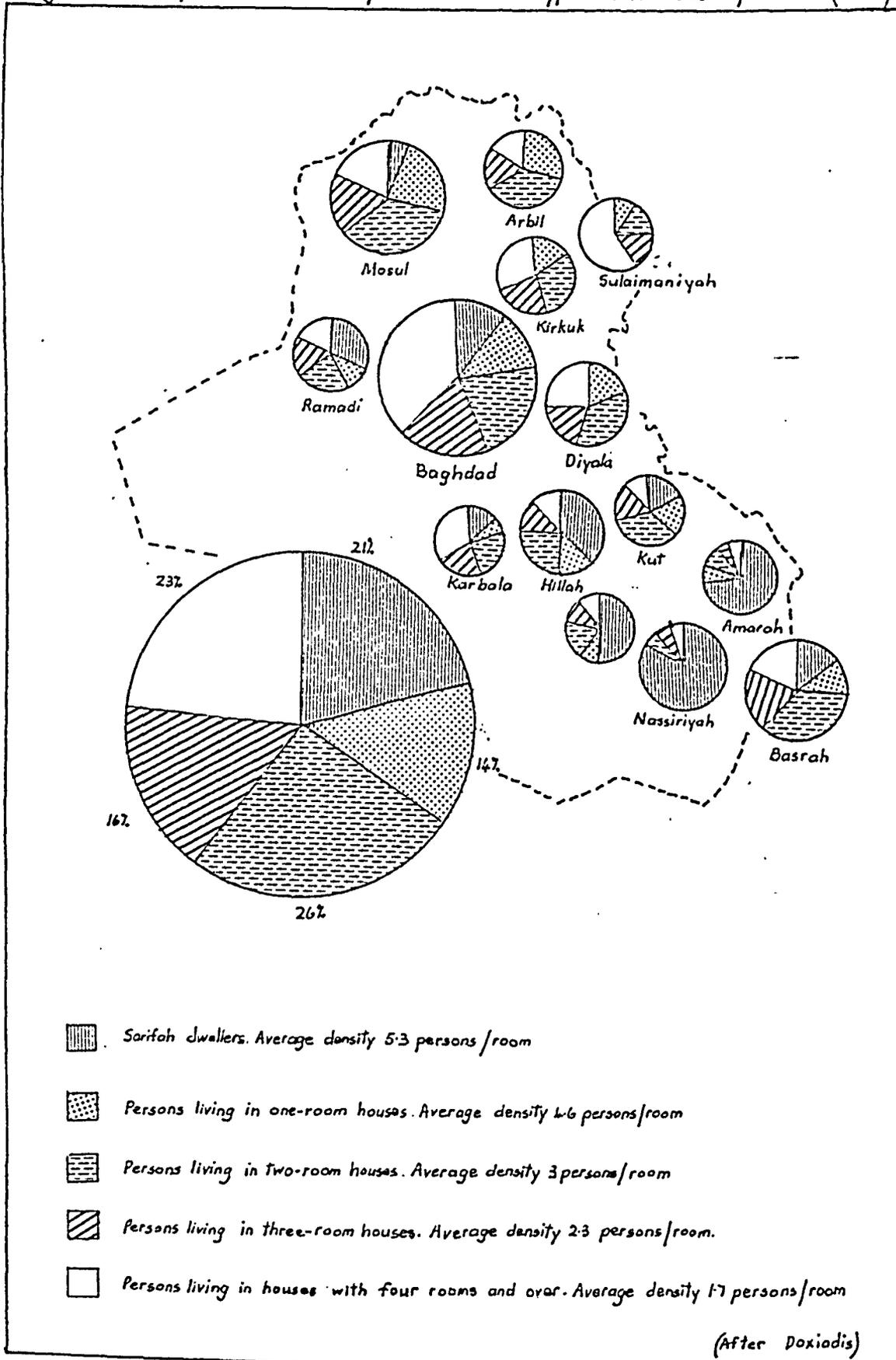
Motive	%
Better employment and income	75.9
Family ties	6.9
Better social and health services	6.9
More recreational facilities	6.9
Education	3.4
	100.0

Source: Fieldwork 1971. See App. A Table K.

All these factors were operating either to push fallahin from their rural areas or to attract them to the major towns. Meanwhile the Government ignored them, and developed no policies related to a long-term distribution of population and the most suitable balance between urban and rural population.³⁵

Because of the ineffectiveness of the earlier proposals for dealing with the migration problem, it has only recently begun to decline.³⁶ This was because of some governmental restriction on such movements and the slight improvement in rural conditions. In

Fig 9.5 Density of Inhabitants per Room and Types of Houses by Liwas (1956)



September 1961, the General Military Officer, issued an order by which no sarifah or kukh could be erected within Amanat al-Asimah's boundaries. In 1963, almost all kukhs and sarifahs were knocked down, and the dwellers were rehoused chiefly in al-Thawrah and al-Shulah settlements.

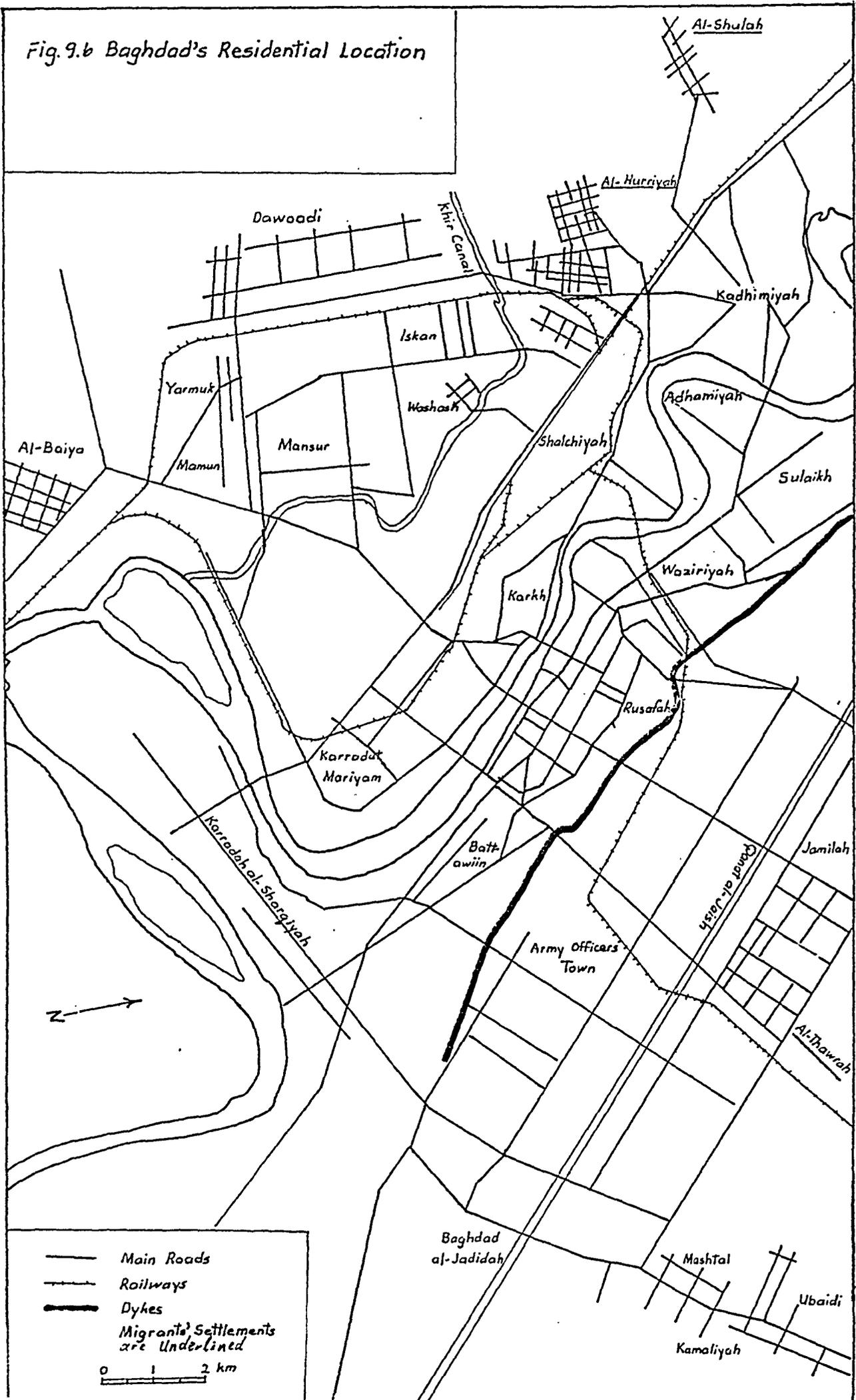
This was followed by a new act passed in March, 1965, prohibiting "building" any new sarifah in Baghdad.³⁷ These decisions naturally played a role in reducing the scale of migration, though, in spite of these developments, migration still continues, and new clustered or scattered sarifahs have begun to emerge again. This was to be expected as nearly all the decisions made were treating symptoms rather than causes. Thus Hamurabi's code was more effective in combating the lawlessness of the people flocking into the early Mesopotamian cities than modern Iraq's treatment of its problems has been.³⁸ However, the squatter phenomenon is not a matter of history, it is a complicated socio-economic problem influencing almost all aspects of life in Baghdad, and it should be realised that migration in Iraq, and its consequences in creating slums, cannot be eliminated unless poverty itself is attacked.

Some of the consequences of Migration

Baghdad and Basrah in particular, have suffered the severest consequences of migration. The main problem was that of housing from which Baghdad suffers more than any other city in the country (Fig. 9.5).

The pattern of land values, like the physiognomy of Baghdad has changed considerably. As a result of the first peak of migration in the 1950's, a new law of land subdivision was passed in 1955, per-

Fig. 9.6 Baghdad's Residential Location



mitting the ^αparcellation of governmental and vacant rural lands.

Consequently, rapid subdivision took place in much of the agricultural and vacant lands surrounding the capital. Al-Huriyah, al-Ba^ḥḥiyah,

and other suburbs, thus began their incipient modern development.

These areas house chiefly migrants, and low middle-class and middle-class families. In the 1960's they became huge suburbs within the

enlarged Amanat al-Asimah boundaries (Fig. 9.1). Most land in these two areas was owned by two influential and wealthy families (al-

Chalabi and al-Baiya'). The effect of the new law in the 1950's

was that subdivision yielded 3,040 plots in the area of al-Washash west and north of the old airport, about 12,000 plots in al-Dawoodi

west of al-Mansur, and about 19,000 plots were on the East Side in

Waziriyah, Battawiin and Karradah al-Sharqiyah³⁹ (Fig. 9.6).

The inhabitants of sarifah shanty towns have contributed to the employment problem, as the labour force surpassed the potential of the

capital. In 1947, only 25 per cent of Baghdad's sarifah dwellers

were employed permanently, as against an average of 30 per cent for the whole country.

In 1954 the principal Bureau of Statistics, Ministry of Economics, surveyed 126 families living in sarifahs in Baghdad. They found that the earning families had an average 1.2 wage earners per family.

The Bureau also found that 89 per cent of the total family income was derived from work.

Table 9.8: The number and percentage of working persons in sarifah camps according to occupation.

Occupation	No. .	%
Government employees (except workers)	46	31.5
Administrative in private enterprises (except workers)	-	-
Transport workers	9	6.2
Construction workers and working proprietors in industry	8	5.5
Working in services	9	6.2
Other craftsmen	51	34.9
Wholesalers and retailers including working proprietors and pedlars	4	0.7
Workers not specified	6	8.2
Others	4	6.8
Total	137	100.0

Source: Principal Bureau of Statistics, The Household Budget Enquiry in the City of Baghdad and its Environs, 1954, pp 7 - 12.

This survey found that only 41 per cent of the workers in the surveyed sarifah area were unskilled compared with the 39 per cent of the urban sample. It also showed that while 12.2 per cent of the surveyed sample in the built-up area were retailers, they constituted only 4.3 per cent in the sarifah sample. Pedlars constituted 4.8 per cent of the town sample while the percentage reached 14.3 in the sarifah sample.⁴⁰ However, Doxiadis put the percentage of unskilled workers in the sarifah area at 60 in 1957 while in the same year Philips found in his sample in al-Asimah settlement that more than 55 per cent were unskilled.⁴² The writer found that the percentage of the unskilled workers in al-Thawrah was 45.7 per cent the rest having temporary occupations as pedlars, porters, sweepers, etc.,

while 38.5 per cent joined the police and army.⁴³

Al-Midfai found that 62.7 per cent of the sarifah inhabitants of al-Asimah and Adhamiyah were unskilled. The second important occupation was the itinerant salesman. The percentage was 12.2 in the al-Asimah area.⁴⁴

With the excess of the labour force the average wages have decreased considerably, at the same time increasing the unemployment problem. This is reflected in a striking characteristic of Baghdad streets today, i.e. the fact that its pavements are full of pedlars and the number of gahwahs (coffee houses) has increased dramatically to cater mainly for idle migrants.

Gahwahs mainly frequented by migrants are concentrated in areas such as al-Thawrah and al-Shulah. Sometimes, gahwahs became an alternative to the fallahin's 'guest houses' in their villages, where they could meet and gossip. Gahwahs mainly line the major streets, and are most unhygienic. Some of the migrant fallahin, however, become semi-skilled or skilled workers after living and working in the city for some years. Generally migrants are competing with city workers for jobs, thus affecting the income and living standard of the latter when urban dwellers have to accept lower paid jobs.

The availability of cheap labour in brickworks and other building industry^{ik} affects the production of these industries which remains primitive or at the best unmechanised.

The wages of migrant workers are usually low, and the monthly income of a migrant family in the 1960's has been variously estimated as 10 - 20 I.D.⁴⁵ whereas in 1954 it was less than 9.5.*

* For the urban family in Baghdad the average monthly income was put by the Principal Bureau of Statistics at more than 12.5 I.D.⁴⁶

1960 Statistics for al-Shakiriyah settlement in al-Karkh, showed that 5.2 per cent of the inhabitants had a monthly income of 11 - 14 I.D. Those with more than 25 I.D. represented no more than 3 per cent of the total population. The average monthly income in Karradah al-Sharqiyah on the East Side was less than 10 I.D.⁴⁷ The average monthly income of the interviewed families in al-Thawrah was about 28.4 I.D. in 1971. From the above it can be seen how low the average income of the migrant fallah is, yet he enjoys a superior status compared to his former condition in his home village. In the countryside some of the fallahin as Azeez stated, had never seen any money while others were living even by stealing.

Migrant families were economically active. Men are engaged in different kinds of unskilled work, while women especially in sarifahs built on the vacant lots in established residential areas also work as servants for the well-to-do families thus supplementing the family income. Women in buffalo-owning sarifahs sell milk, butter, and yoghurt in the city, and even the small children can earn a few files every day by begging and doing small jobs. Besides all these opportunities, not available in the rural areas, migrant fallahin are making use of the free health and educational services of the town.

The nature of expenditure of the sarifah dwellers, can be seen by using information from the sample surveys carried out in Baghdad and its environs by the Principal Bureau of Statistics in 1954 and by the Central Statistical Organisation in 1961. From (Table 9.9) it is clear that more than 80 per cent of the family income in sarifah areas was spent on essential items such as food, clothing and fuel. Sarifah dwellers spent more on these items than those people living in the built-

up area of Baghdad itself. Sugar, for example, absorbed more than 11 per cent of the income of the sarifah dwellers, whereas it accounted only for 6 per cent of the income of city households. Sarifah dwellers on the other hand paid nothing for rent, whilst it constituted about 10 per cent of the urban family's income. Both groups spent the same amount of their money on meat as on cereals.

Table 9.9: Average monthly expenditure per household in Baghdad and environs 1954.

Type of Expenditure	Built-up area *			Sarifah Camps **		
	I.D.	Fils	Percent	I.D.	Fils	Percent
Foodstuffs:						
Meat	4	674	25.31	4	042	34.48
Vegetables	2	092	11.59	1	252	10.68
Eggs	0	887	4.20	0	536	4.57
Sugar and Tea	0	252	1.10	0	051	0.43
Fruits	1	187	6.42	1	385	11.86
Others	0	291	1.57	0	000	0.00
	0	557	3.81	0	257	2.19
Total	9.	960	58.81	7	523	64.20
Clothing	1	408	7.62	0	935	7.97
Fuel and Electricity	1	434	7.80	1	240	10.58
Furniture	0	309	1.70	0	137	1.16
Rent	1	786	9.70	0	000	0.00
Miscellaneous:						
Cigarettes						
Transport and Others	2	889	15.64	1	528	13.03
Cleaning Materials	0	686	3.71	0	358	3.05
GRAND TOTAL	18	469	100.00	11	721	100.00

Source: Principal Bureau of Statistic, Ministry of Economics, Statistical Abstract for 1955, Baghdad (1956) pp 132 - 133.

* 291 houses

** 59 Sarifahs

As shown in (Table 9.10) sarifah dwellers continued to spend a higher proportion of their income on food. They spent hardly anything on rent compared with the urban families. Electricity accounts for 2 per cent of the family income in the city, whereas to the sarifah dwellers the percentage is negligible. In 1961, the average monthly expenditure of the household in urban Baghdad was about three times that in the sarifah encampments. The average monthly expenditure in Baghdad City and its environs was less than 7 I.D.⁴⁸ The same survey shows that city dwellers are consuming more animal protein, calcium and vitamins than those of sarifah dwellers.

Table 9.10: Average Monthly expenditure per household according to type of expenditure 1961.

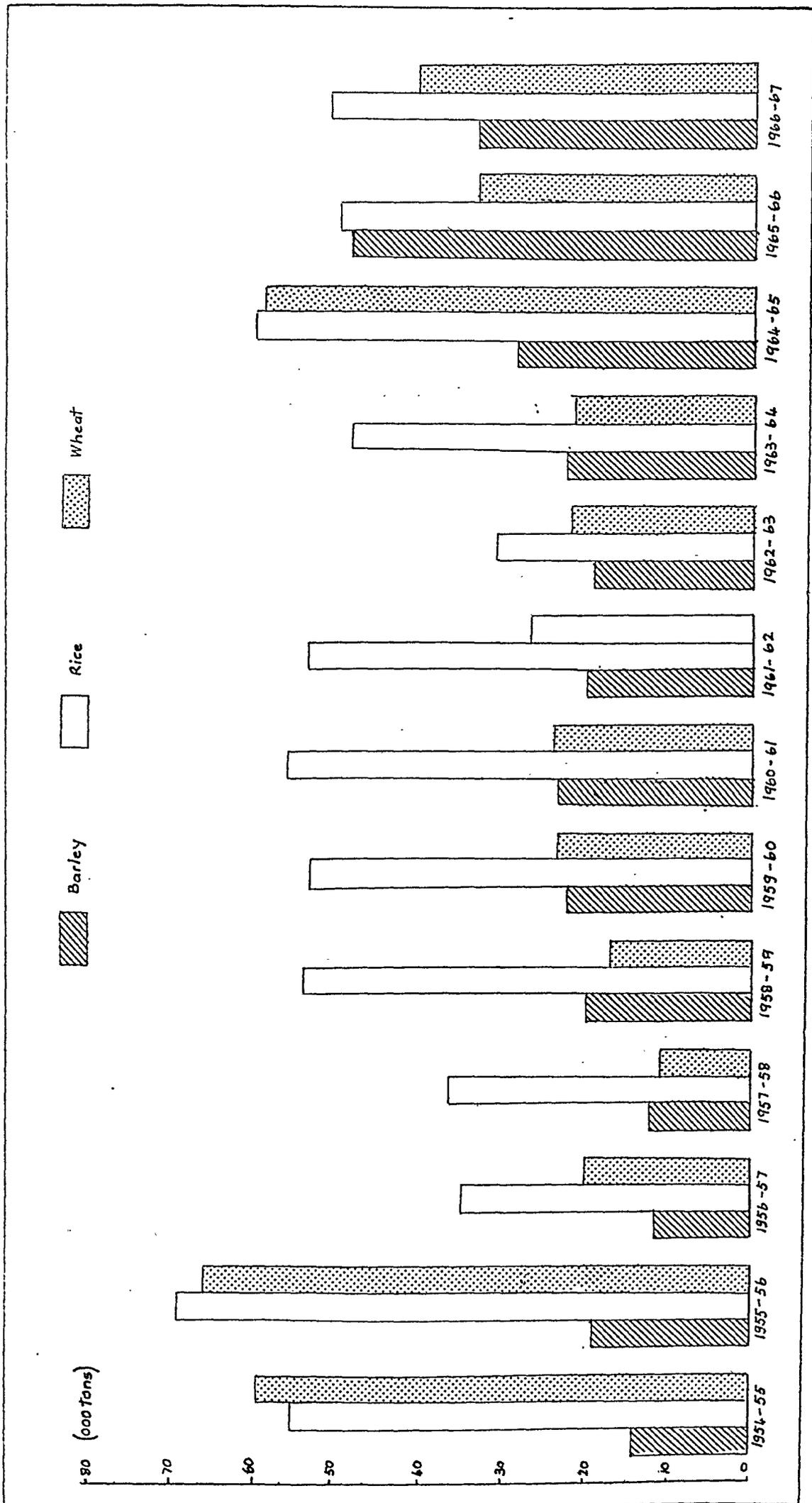
Type of Expenditure	Built-up Area			Sarifah Camps		
	I.D.	Fils	Percent *	I.D.	Fils	Percent **
Foodstuffs	27	342	48.54	11	887	62.65
Rent	5	048	9.00	-	018	0.09
Medicine & Med. Treatment	4	936	8.76	1	610	8.50
Clothing	4	839	8.59	1	312	6.91
Furniture	4	829	8.57	-	713	3.75
Transport	1	753	3.11	-	502	2.64
Fuel	1	445	2.56	1	452	7.65
Cigarettes	1	364	2.42	-	715	3.76
Cleaning Materials	1	216	2.15	-	481	2.53
Electricity	1	151	2.04	-	053	0.30
Entertainment and other expenses	2	402	4.26	-	235	1.23
TOTAL	56	325	100.0	18	978	100.0

Source: Ministry of Planning, Central Bureau of Statistics:
The Household Budget Enquiry in the City of Baghdad and
its Environs, Government Press, Baghdad (1962), Table 16 p 11.

* 756 families

** 126 families

Fig.9.7 Total Production of Main Crops in Amarah Liwa, 1954/55 - 1966/67



Wirth has suggested that with its increasing number of migrant fallahin Iraq in 1953 resembled France before the revolution. Social unrest was continually increasing among fallahin, both in the rural areas and the major towns. He rightly realised that in Baghdad, as in pre-revolutionary Paris, a restless crowd in the capital could achieve more than a rebellious tribe in the south. He predicted that the 100,000 sarifah dwellers would be a main factor in any revolutionary happening. This in fact was what happened in Baghdad in 1958.⁴⁹

Educational, health, and other public services of Baghdad suffered stress. Baghdad was unable to service such huge numbers of adventitious people, and this added to the already weakened service facilities. The health of the established urban people was jeopardized. The sarifah shanty towns, arranged in a ring round Baghdad had unsanitary practices which caused many epidemic diseases and led the government and the wealthy Baghdadi's to think of the urgent need for supplying sanitation and medical care to these encampments, if only for selfish reasons! ⁵⁰

As a direct result of migration pressure on the public services the budget of Baghdad Liwa had a deficit of 1.0 million I.D. in 1956/57. This was also because most sarifahs were encompassed by the new boundaries of Amanat al-Asimah which had been enlarged in 1954/55.⁵¹

As a result of rural-urban migration, the amount of cultivated lands and agricultural produce showed a general decline, as Fig. 9.7 for Amara Liwa indicates. The country began to import considerable quantities of rice, wheat and other foodstuffs which could easily be produced locally. Iraq for example has spent about 22 million

Fig. 9.9

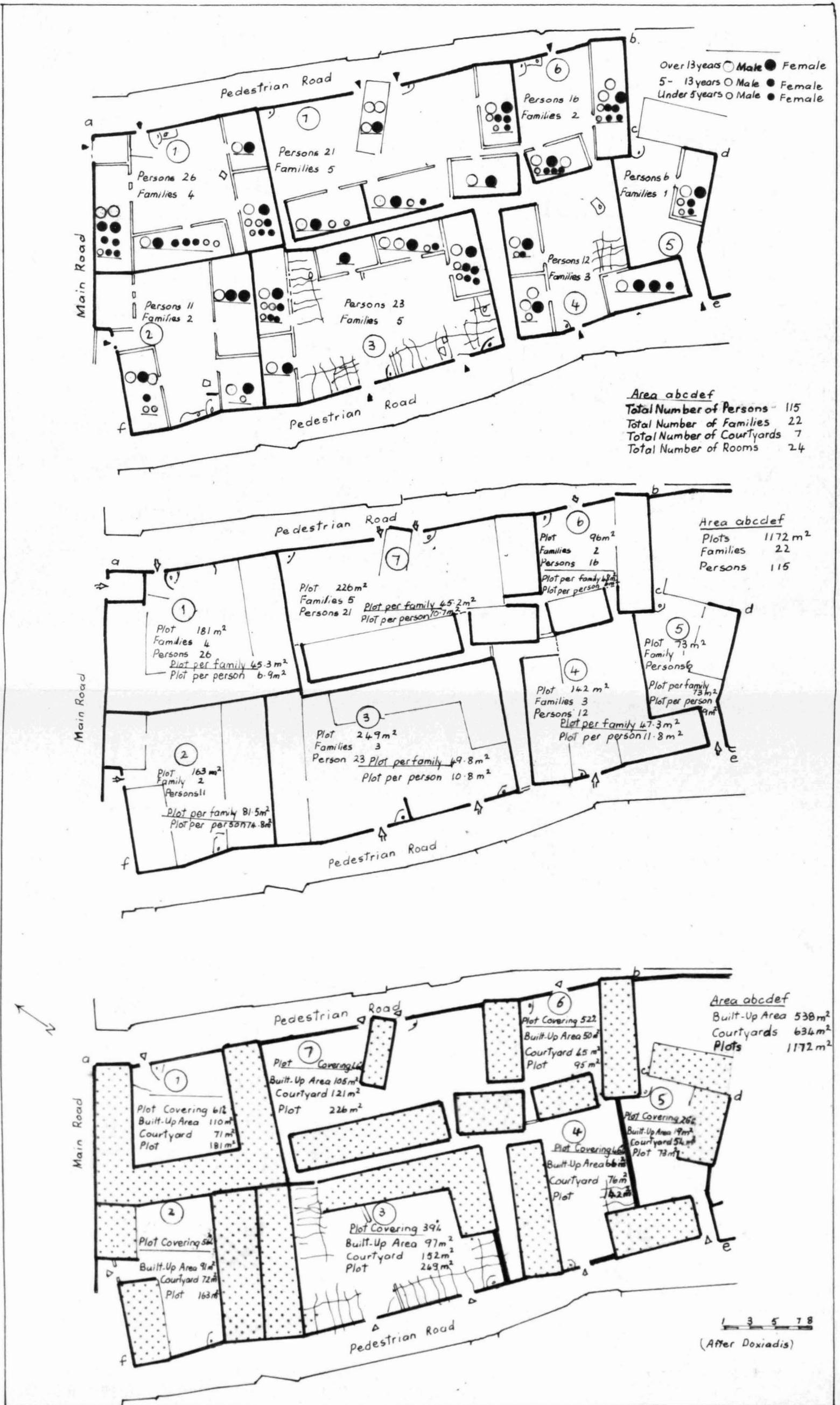


a. Sarifah settlement in Amarah Liwa



b. Sarifah settlements in Baghdad, 1952/53
(after Wirth)

Fig 9.8 Sarifah Block in the Shakriyah Sarifah Area



I.P. 426

F.P. 02

<u>Age Group</u>	<u>%</u>
under 5 Years	20
6 - 13 years	23
over 13 years	57

In 1956, the number of females and males in the sarifah shanty towns of Baghdad was 58,316 and 54,102 respectively.⁵⁹

Of those families interviewed in al-Thawrah, 57.6 per cent were males and 42.4 per cent females.

The Migrant dwellings: (Figs. 9.8, 9.9)

Sarifah camps affect not only the physiognomy but also the social and economic life of the city. The fallahin migrants brought their 'pre-fabricated' sarifah in the form of woven reed mats with them but already in the first winter they discovered that it is far too cold to make do with such light structures. Mesopotamian fine clay soil which required only the hot desert sun to produce durable 'adobe' or sun-dried bricks can be very easily used to form crude mud walls that will withstand central Iraq's atmospheric and seasonal variations.

The climatic conditions of Baghdad thus influenced the structure of the new dwellings of the fallahin. Owing to their huge numbers the uncontrolled sarifah and kukh settlements have influenced the morphological evolution of the city considerably.

Sarifahs could be quickly built overnight on any piece of unfenced property, and their owners could only be evicted if and when the landowner was about to prove his property right in the land. Indeed requisite legal action in Iraq required a year!

A sarifah is a hut with a single room, occasionally two or more rooms, constructed mainly of woven reed matting, where, on average, 5.7 persons live, sleep and cook. A typical sarifah is built over a

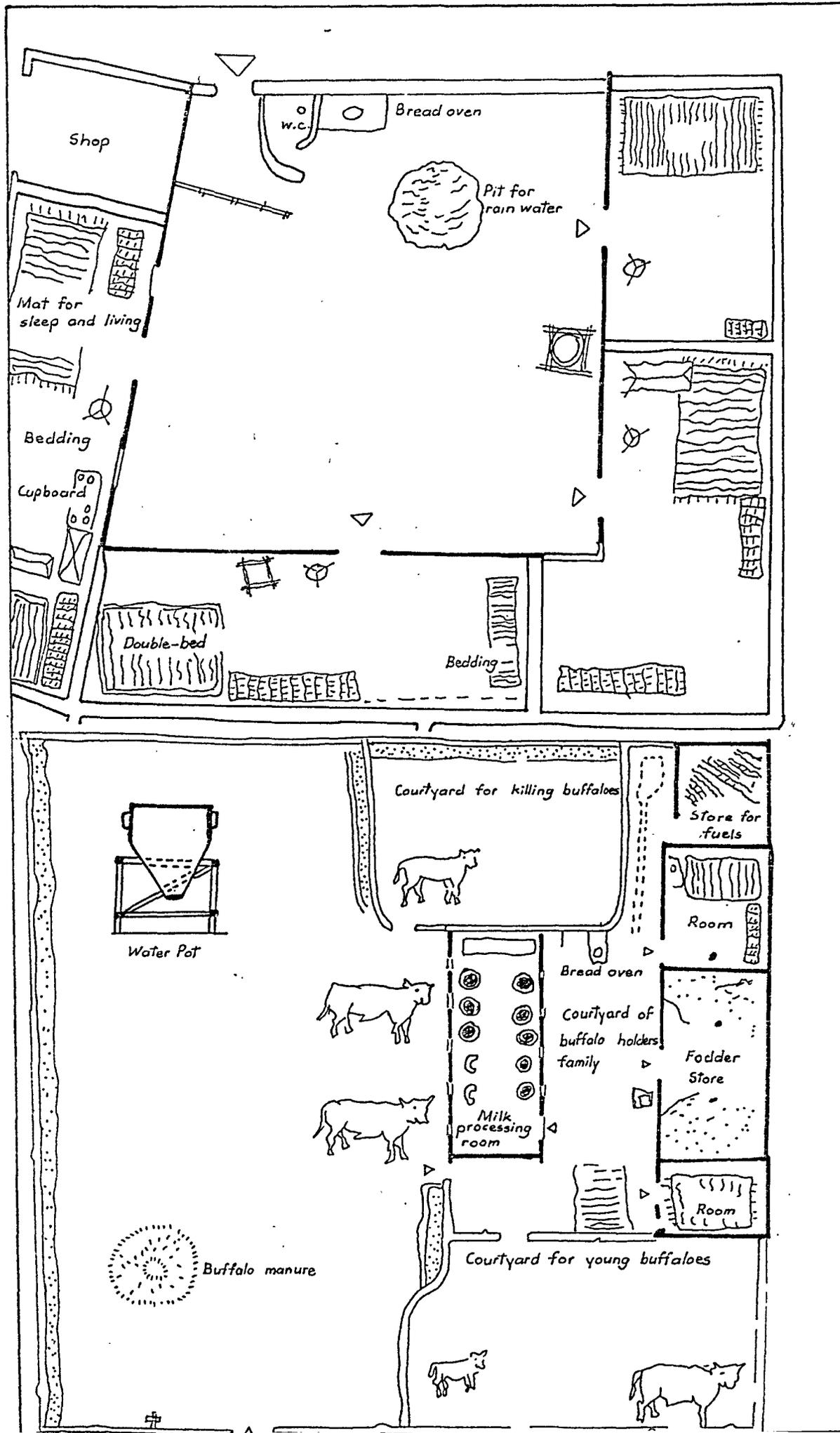
wooden frame, and its roof is constructed in barrel-vault shape with independent matting structurally supported at the two gable ends. The walls are often covered with mud during the rainy season (winter). The sarifah has one opening as a door through which air and light enter, and possibly small high openings. The entrance is often closed by a mat or cloth. In general each sarifah has floor area of 20 sq. m and is seldom more than 2 m high (Fig. 9.9),

Usually, there is no separate kitchen space. Food is prepared in an odd corner. If a special space was set aside for a kitchen, and no chimney existed, the smoke would have to emerge through the only entrance door, or through a special hole made for this purpose in the outer wall. Most sarifahs had no access to a latrine, and if such exist it will only consist of a shallow hole surrounded by a piece of reed matting or mud wall. The object is clearly privacy rather than sanitation. It is reported that 99 per cent of sarifahs had no latrines⁶⁰. In the sarifahs surveyed by the writer in the summer of 1971 only 6 per cent of the sarifahs in the al-Ghazali area were provided with latrines. Bathing, if there is any, takes place in large petrol cans.

One distinguishing characteristic of sarifahs is that they can be removed easily to another site without difficulty. The labour force is free, as family members, relatives and neighbours co-operate to remove the sarifah and re-erect it at any new location.

Two or more sarifahs sometimes combine to open onto little walled yards, the whole forming the dining area of related families. The oven is usually primitive and provided in every sarifah as an essential plan element. It is used daily for making bread, using twigs or dung as fuel materials. It heats the adjacent areas in winter and sometimes, as in Cairo, provides a warm bed for a family

Fig.9.10 Sarifahs of Buffalo Owners (After Doxiadis)



without blankets.⁶¹

A sarifah costs 30 I.D. and a kukh 10. A sarifah lasts less than 5 years whereas kukhs will last for about 10 years.^{62*}

The block pattern of sarifah dwellings has been well presented by Doxiadis. Blocks of sarifahs are the main tribal structure, influencing the whole pattern of sarifah encampments. Blocks of sarifahs consist of groups of common courtyards enclosed by high mud boundary walls, in which there are usually from three to five single-room huts, each occupied by one family. As found in al-Shakriyah 15.5 persons or three families were sharing one courtyard on average, with a common oven, toilet, and pit for rainwater drainage. No water or kitchen were provided, exactly as in the case in the present sarifahs of the al-Ghazali area. In Fig. 9.8 one can trace the sarifah and block plans, together with the detail of persons, families, rooms, courtyards and built-up areas of a typical block complex of seven courtyards. The average number of persons per room was 4.8.^{**} Each person had 5.5 sq. m. of the built-up area. The average size of room (sarifah) was 22.5 sq. m. The average number of families per sarifah was 1.4 in this sample. The above analysis and figures refer to dwellings whose owners had no buffaloes. For migrants with buffaloes, concentrated in al-Asimah to the East of the East Dyke, sarifah arrangements are different, as shown in Fig. 9.10.

Sarifah and kukh settlements are arranged at random, with narrow irregularly aligned pathways, usually having ditches full of stagnant and foul waters near which human beings and animals live huddled together.

* Doxiadis put the approximate cost of mud-built sarifah of 20 sq. m at about 20 I.D.

** In the surveyed houses in al-Thawrah it was 3.2.

Fig 9.11 Sarifah settelment in proximal extramural position outside fixation line of the Eastern dyke.(The black line represents Shtait).



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To facilitate the accessibility to various parts of some sarifah settlements, the government had laid down (built) rectangular or straight dirt roads for wheeled traffic, which is perhaps has been ever used. In case of existence of such roads, sarifah settlements^{are} divided into unequal rectangular sarifah blocks (Fig. 9.11).

The description of one such settlement at al-Asimah lying adjacent to al-Saddah al-Sharqiyah will give an idea of the pattern and life of these sarifah squatters areas (Fig. 9.11). In 1947, the population of this shanty town was put at 20,910 persons. They were comprising 16.2 per cent of the total population of Baghdad's squatter settlements, only 644 males and 5 females of these reputed to be literate. The sarifahs of this encampment as in others were erected on land owned by inhabitants of the city or by the state. The population of al-Asimah increased to 50,000 dwellers by 1953/54, and at least 75 per cent of them came from Amarah Liwa.⁶³

There were no latrines and only four taps in the whole colony, reflecting the lack of governmental efforts to improve conditions. The only drainage channel flowed through the encampment and was open. It was forming pools and dirty lagoons of liquids, where buffaloes swam and from which odious smells rose. The channel is now being closed. Frequent floods and rainwater turned the area into a bog, causing many of the sarifahs to collapse and disrupting communications. The slum areas of al-Asimah and other sarifah camps have no infrastructure, such as a water supply, an electricity network, paved streets or garbage collection. Also, they lack community services such as schools, mosques and medical care. In 1956, it was found that while 69 per cent of the houses surveyed in Baghdad had electricity, no

sarifah was supplied with electricity.⁶⁴ Epidemic and endemic diseases (smallpox, trachoma, dysentery, bilharzia, hook-worm, etc.) played havoc with the sarifah population, especially among children and the old. During the 1954 flood, practically all sarifahs of al-Asimah (and otherseast of the bund) collapsed leaving tens of thousands of people homeless. Thus they were forced to camp on the other side of the dyke taking up any available space. Some of the inhabitants, however, remained near the brickworks, despite the risk of floods in the area, so as not to lose their jobs there.⁶⁵ Rudimentary suqs of food were developed in the shack towns and these functioned under the most insanitary conditions.

The geographical pattern of Sarifah Shanty Towns (Fig. 9.1, 9.4)

During the period 1919 - 1968, the population of Iraq has tripled, while the population of Baghdad has increased eightfold. Kirkuk Liwa, containing the main oil city of Iraq, has multiplied its population five times while Basrah, the port and second major town of the country grew to 4 - 5 times its size and the liwas of Karbala and Diyala 4 times. Amarah Liwa, the major source of migration, increased its population by only one fifth.⁶⁶ The enormous and speedy increase of Baghdad was gained mainly by migration.

The numerous shanty towns within *and* around Baghdad have created new socio-economic forms and problems never experienced before. They express an intimate relationship between chronology, spatial pattern and location.

As was mentioned before these shanty settlements passed through three phases, i.e. an incipient phase during the 1940's, an intermediate phase during the 1950's and a final phase during the 1960's and 1970's. As regards spatial pattern, sarifah shacks occur scattered

(dispersed) in small clusters, or in large colonies. Locationwise, they are either intra- or extramurally located. Intramural shanties lie either close to the fixation lines or further within the built-up area. The latter are to be found either in the vacant lands beside the well-to-do families (Fig. 9.9), or in the palmgroves, particularly those which were unfenced. The extramural shanties, on the other hand, are located in either proximal or distal sites.

The major factors determining the locational pattern of fallahin shanties are proximity to relatives, the commercial centre, the workshop and industrial areas, the health and educational institutions, and wealthy families, and availability of unfenced vacant lots, and barracks. The type of land ownership also influenced the spatial distribution of sarifahs importantly. Thus the floodable open areas outside the eastern dyke became favourable sites, not only because there was no possibility for the extension of permanently built-up areas on this side, but also because the land here is owned either by the state of al-Awqaf Department. Thus the fallahin were able to use the land free of charge^{or}/at very low rent.

Some of the fenced orchards however, were unoccupied by sarifahs as they were owned, chiefly by influential families who could prohibit such construction, sometimes by using the army or police.

During the formative phase, i.e. in the 1940's, sarifah shanties, assumed a dispersed pattern with some tendency to clustering (Fig. 9.1). These shanties were located either in distal or in proximal extramural sites. The former is seen in the Shakriyah and Karradat Mariyam areas on the West Side, the latter in the al-Asimah area on the East Side. However, it is interesting to notice that on either side of the city shacks were not far from the railways. Likewise the barracks,

West Side

particularly those on the/ have attracted these structures. On the East Side there were some intramural sarifah shanties, but close to those at al-Asimah some of the eastern shanties of this period were near enough to the brick works where further opportunities for work were available. On both sides of the city they lay fairly near to the Old Town.

In the second period i.e. in the 1950's, further expansion sarifah areas took place. The scattered and clustered sarifahs of the first phase acted as nuclei around which huge sarifah and kukh camps have grown. Some of the earlier clusters were assimilated within the mammoth shanty towns of al-Shakriyah - Karradat Mariyam and al-Asimah. Other clusters were dismantled because their occupants moved to sites nearer to the centre though still within the sarifah colonies.

During this stage the initial formative factors continued to be important but some new ones emerged as well.

Sheikh Omar Street in Rusafah and Sheikh Maruf Street in Karkh developed as major workshop streets with garages, warehouses, slaughterhouses, railway stations and light industries, and attracted some of the sarifah squatters. As seen in (Fig. 9.1) the shanties of this period accumulated in ten major areas. ^{The distribution of} healthy families in this and the third period continued as a major determinant factor in locating the fallahin shaks. ^c_^

By being next to the wealthy families like those found in Harthiyah at present fallahin can work as servants in these houses. They also supply themselves here with free water and second-hand clothes. In addition, they benefit from the contact with these wealthy families, ^{ies} who are influential and might be able to find jobs for them. Thus it was, and still is, a common feature in the physiognomy of Baghdad to

find clustered or scattered sarifahs beside the large residences of well-to-do families in a kind of spatial symbiosis.

It is interesting also that both in the 1950's and 1960's terminal garages influenced the location of shanty towns in that fall^ahin migrants could follow the news of their original native areas and contact their tribal relatives from these garages.

Occasionally the streets of Baghdad were occupied by sarifahs of lighter construction. Sometimes even wrecked cars around the traditional town or near the centre were used as part of sarifahs.⁶⁷

In this period as well as in the third phase of sarifah developments, sarifahs were concentrated more on the East Side, where the commercial core, the main industries and offices are located. Also owing to the existence of flood danger none of the urban dwellers dared to build their houses outside the dyke. In 1956, about 65 per cent of the sarifahs were located on the East Side and were inhabited by more than 70 per cent of sarifah inhabitants.⁶⁸

Although shanties grew in the fifties, only in the third phase, i.e. the 1960's, did they reach their unprecedented size and distribution, influencing the whole pattern of the city. This phase can be divided into two sub-periods, i.e. a peak sub-period up to 1963, followed by a recessive sub-period. The latter arose from the transfer of sarifah dwellers to the new permanent housing settlements of al-Shulah and al-Thawrah (Fig. 9.6).

The growth of sarifahs during the final phase consisted of the expansion of the original shanty towns as well as the emergence of new sarifah camps. This occurred both intramurally and extramurally. Intramural expansion is seen in Karradat Mariyam, Rahmaniya, Shalchiyah and Hurriyah-Kadhimiya on the West Side. It is also found

in al-Sarrafiyah, Bustan Haj Muhsin, al-Kasrah and the periphery of several traditional mahallahs on the East Side. They have since been enveloped by subsequent residential and other accretions. Extramural sarifah developments formed part of the expansion of the Inner Fringe Belt. Thus the pre-1956 city has been girdled with an almost complete ring of sarifah settlements, varying in width from one to five kms.⁶⁹

Along the fixation line of the dyke on the East Side, the sarifah settlement near Baghdad al-Jadidah, has nearly merged with that of al-Asimah. The latter in turn has almost merged with the shanty town outside al-Waziriyah, which again was not far from that of al-Sulaikh.

It is interesting that virtually none of the fallahin migrants rented rooms in houses inside the city, simply because they could not afford it and also because they did not want to be involved in the life of the city on their first arrival. This increased the external expansion of shanty encampments. Thus it may well be said that before the replacement of sarifah settlements Baghdad developed into a 'megalo-slum' city rather than a megalo polis.⁷⁰

On the East Side, the dyke marks a clear morphological and social division between the city of Baghdad, where the higher income people live, and the poor migrants of the sarifah camps. At first sarifah dwellings grew along this dyke and in so doing echoed the traditional linear form of Baghdad's growth. This linear growth was impeded by al-Rashid Barracks to the south and the agricultural lands to the north, and by the fact that the fallahin did not want to be too far from the centre. Thus east-west growth accelerated despite such setbacks as the floods on the East Side. However on both sides of the city sarifahs near the barracks were primarily occupied by migrant soldiers and their relatives.

The area between Adhamiyah and Rusafah has not yet been fully built-up. Built-up areas here were interspersed with palm groves and vacant lands, such as of al-Sarrafiyah, al-Kasrah and Bustan Haj Muhsin. These residuals of open land were occupied by the sarifahs of fallahin migrants. These relatively central sarifah enclaves between Bab al-Mudham, where the main health and educational institutions are found, and Adhamiyah, strung along the streets of Abu-Talib and 'al-Imam al-Adham, had all the advantages of central location. Educational and medical facilities as well as opportunities for work were available in this area.

On either side of the city the size and distribution of intra- and extramural sarifah camps were changeable. This is particularly true on the East Side.

Every second or third year on average, the inhabitants of sarifahs beyond the dykes had to leave their shacks in the Spring and flee before the advancing waters of the Tigris. But most of them returned to their former sites in the following season. Before 1953, the government periodically attempted to clear sarifahs from the residential areas, which were occupied mainly by affluent government members. A few days' notice to move was given, and then the sarifahs were torn down. Prior to the flood of March 1954 the residential suburbs had been fairly well cleared of sarifahs, and the migrants were settled beyond the eastern bund, mainly in al-Asimah. When that area was inundated, they returned to the residential areas filling the empty lots again. In 1954/55 the suburbs were once more forcibly cleared of most of the huts, but when the vigilance of the policemen, most of whom were themselves former fallahin, relaxed the sarifahs were rebuilt. Whether these people were new migrants to the city or

simply people who had returned from other sarifah areas cannot be said with certainty, for the sarifah settlements surrounding the city have continued to grow with the continuance of migration.⁷¹

The hygienic condition of the eastern sarifahs further deteriorated because some of the city's waste water was pumped over the dyke to these areas. In addition, Amanat al-Asimah, the main authority responsible for the city's cleanliness and hygiene, together with private individuals used this site as a dumping ground for human and animal excrements and rubbish.

On the West Side the spatial distribution of shack towns was not influenced by flood danger, as this side is higher and thus more secure from flooding, having also the added advantage that water is readily available from the Tigris and other canals such as al-Khir (Fig. 9.1). Accordingly the extension of the West Side was more obvious and took place earlier than that of the East Side. The railway workshops, textile and other industries are found on this side, also a considerable number of the wealthy families, all of which offered more opportunities for work. Moreover al-Karkh includes a portion of the commercial centre from which the migrants derived many advantages. Sarifahs on this side had scattered more than on the East Side. An intermittent ring of shanties could be observed in the extramural of the fringe belt of traditional Karkh. Within it al-Shakriyah and Karradat Mariyam have the biggest kukh and sarifah accumulation. Probably it emerged as far back as the 1930's and like the other centres, has expanded largely in the 1950's and reached its greatest size in the 1960's. Some of the sarifah inhabitants were soldiers or employees in Al-Washash barracks similar to al-Asimah, the railway line to Basrah was the axis along which the encampment expanded.

Subsequent growth of the city of Baghdad engulfed al-Shakriyah and other sarifah settlements, mostly in the form of high-class residential suburbs. Thus nearby shanty towns obtained additional locational advantages. Different parts of the city are also easily accessible by regular public and private transport and the health and educational facilities of traditional Karkh could be used by the fallahin migrants as well.

Moreover there were several other small extramural sarifah clusters such as the settlement of Um al-Idham near the Basrah railway. Around traditional Karkh emerged the Sheikh Maruf, Sheikh Junaid and al-Rahmaniyah agglomerations. Further to the north, the sarifah settlement of al-Shalchiyah has developed along the Mosul railway and is almost linked with the proximal fringe belt settlement of Karkh and Hurriyah. The old airport, the railway works, the railway lines, the cemeteries of Karkh, the Mosul highroad and al-Khir canal were the main axes along which the West Side sarifahs have developed.

Sarifah settlements have common features. Despite the existence of some rectilinear pattern of primitive and unpaved main roads built at an earlier date, they are characterized by numerous tortuous pathways and agids impenetrable to wheeled traffic and developed exclusively for pedestrians and animals (Fig. 9.11). A series of stagnant pools for cattle were occasionally interlaced with narrow paths, running just above the water level. The physical condition of Kukhs and sarifahs in Baghdad was, then as now, much worse than predecessors in the rural areas as migrants had to accommodate themselves mainly in very compact settlements (Figs. 9.8, 9.9, 9.11).

From this discussion it is clear that sarifah dwellings, together with railway establishments, industrial firms, dykes, cemeteries, parks, residual cropped land and vacant land constituted characteristic

fringe-belt land uses in Baghdad up to 1963. With the earlier urban expansion of the city particularly before 1956, sarifahs had failed to penetrate the intramural adjacent to the eastern fixation line, because owners have already developed their plots as residences of mainly middle class complexion.

Sarifah dwellers as a relatively important element in Baghdad's city life.

In course of time, many shanty towns have come to play a rather significant role in the social and economic life of the city. In a strange, yet perfectly natural way, Baghdad absorbed its sarifahs 'organically', the fallahin producing services for the city dwellers and vice versa. Thus both parts are perfectly tuned to one another, making a seemingly stable socio-functional complex. Dr. Adams had noticed the social system that was based upon the proximity of the poorest to the wealthiest elements of the society. The former supplied cheap servants and gardeners, eggs, chickens, etc. Until the end of the 1950's, the major source of milk products in the city were the cattle of sarifah dwellers. Many other foodstuffs in the local suqs, originated in the sarifah camps. The sarifah inhabitants in turn have come to depend upon the wealthy neighbours for much of their income, and for water, which was not available to many of the urban poor.⁷²

In the former rural areas milk could be consumed merely by the fallahin themselves, but in Baghdad it became a source of cash income. Cattle lived in a special cattleyard built against the sarifahs with one of its four mud walls made into a manger. Usually cows were found in the residential areas, whereas buffaloes were raised on the fringe of the settlements. Women and children lead their cows on halters out through the streets into the residential areas. They wait in front of

each house for the servant or one of the inhabitants to bring the milk bottle and milk the cow straight into the bottle with the help of a large funnel. This method of transporting the milk from the cow to the consumer's door assures him firstly that he is getting absolutely fresh milk, and secondly that it is pure cow's milk, and not mixed with goats' or buffalo's milk.⁷³ Thus the sale of milk was a main factor in the location of cattle sarifahs. Cattle remained in the town and the fodder was brought to them from outside. This practice was found especially in summer where the temperature is too high for ordinary milk transport and where there is not enough refrigerated transport.

The concept of class symbiosis i.e. the functional co-existence of two economically very different classes in the same area in Baghdad adds another interesting socio-morphological feature to the case study of Baghdad. It is also typical of other large cities in the Third World. This co-existence has resulted in a distinct organism that brings mutual advantage to the participants.

In terms of morphology, it was not uncommon for the sarifahs of fallahin to be located in proximity to the mansion-like houses of well-to-do inhabitants. Sometimes sarifahs have been built next to the walls of the houses of wealthy people and on any vacant land near to them. The morphological homogeneity of well-to-do localities thus became heterogeneous.

This physical proximity is associated with functional integration. As mentioned earlier the sarifah inhabitants performed necessary services for the wealthy urban people who inhabited the permanent houses.

Sarifah dwellers sell produce such as milk and eggs to their wealthy neighbours. At the same time the wealthy families were, as now, benefitting from nearly every member of the sarifah dwelling. Children and women act as servants. These services included such things as washing the floors of the houses, dish-washing, watering the gardens,

sometimes baking traditional bread and washing clothes. Wealthy ladies are sometimes accompanied by sarifah women in their shopping or picnic trips to carry and do what ever may be required. It is still a matter of social prestige among the high class communities to have servants.

Sarifah men on the other hand act as servants, porters, gardeners, guards, chauffeurs and perform all kinds of unskilled work.

In addition, wealthy families supply the sarifah dwellers with water, clothes, food and sometimes even shelter.

The functional integration resulting from the spatial symbiosis of sarifahs and high-class houses forms a type of strong social relationship in the majority of cases. Migrants' loyalty now is towards the wealthy urbanites instead of their former sheikhs. The influential urbanites used to find permanent jobs for such fallahin either with private firms or the army, the police, or other government departments. In spite of this spatial symbiosis of sarifahs and large houses and the functional integration between the inhabitants, marriage would of course never take place between the two groups. Each class has its own social circles within which they behave as a distinct community.

When the wealthy woman entertains her friends the sarifah woman still acts as servant, and will not mix in any way with the gathering, and the same applies to sarifah men.

The mutual interest between the two classes was one of the reasons behind the failure of several attempts to clear the intramural sarifahs prior to 1963.

Sarifah Replacement

From the above it can be seen how the migrants have influenced the socio-economic structure of the country in general and the morphology of Baghdad in particular. The housing problem seems to be

a.



b.



c.



a. Sarifah accretion in al-Hurriyah. b. Sarifah settlement between al-Hurriyah and al-Salam along al-Khir canal. c. A market in al-Thawrah.

beyond the control of the government, the agricultural decline began to show its negative consequences on the national economy. Therefore the government took some restricting action against the continuation of migration by using the police to watch the movement of peasant farmers. Orders and special acts in 1961, 1963 and 1965 prohibited sarifah construction within Amanat al-Asimah boundaries. All sarifahs were ordered to be cleared during 1963, and to implement such a radical decision army and police were used to demolish these buildings, leaving hills of debris in the very flat areas of Baghdad. Army trucks transported families and household effects to their new permanent dwellings in al-Thawrah (the Revolution) and al-Shulah (the Torch) (Fig. 9.6). Attempts to resettle migrants in fact go back to the 1950's, when various projects were proposed to re-house them. The only successful one was that of al-Thawrah in 1960. In the same year, al-Shulah was chosen for the same purpose on the West Side. Clearly the authorities dealt with the consequences of migration rather than its causes.

As a result new waves of migrants have followed the distribution of new houses and plots, as beneficiaries started writing to their relatives describing their new "splendid" life in their new "fine" houses, thus encouraging them to leave their villages. Migration after 1963 was often clandestine. Once again Baghdad has its own sarifah and kukh colonies, though not on the same scale. The new sarifahs show a tendency to occur as far as possible in the same areas as the former sarifahs, especially on the edge of traditional Rusafah (in al-Ghazali area along the bund) and Karkh (in Sheikh Maruf in al-Salam and along al-Khir canal (Figs. 9.1, 9.12a,b). Furthermore, some sarifahs have infiltrated into the built-up areas on

Fig. 9.14 Internal Migration in Iraq (1968)

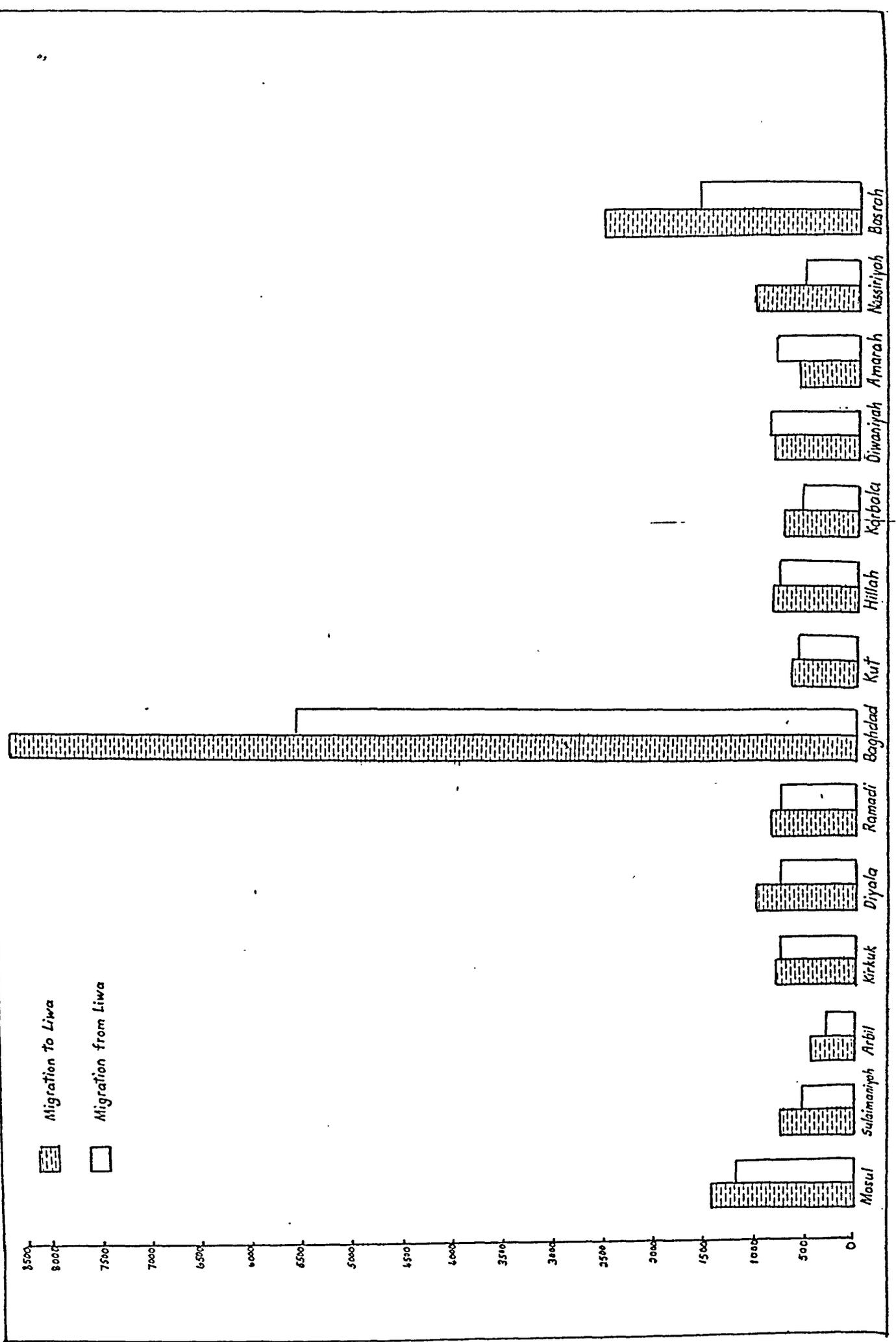
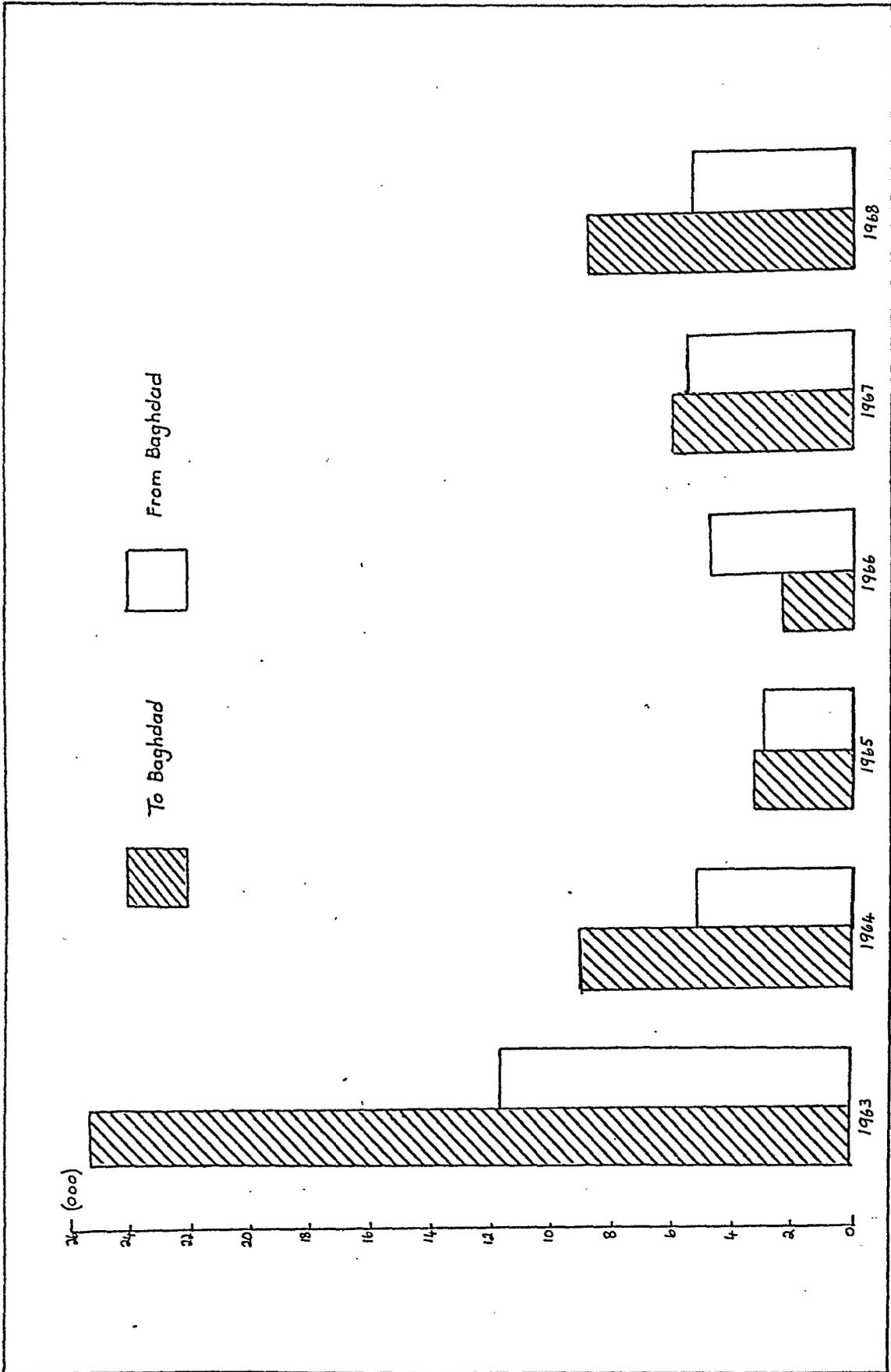


Fig. 9.13 Migration to and from Baghdad (1963-1968)



both sides, but this time restricted mostly to the poor or low middle class areas such as Baghdad al-Jadidah settlement. The number of migrants to Baghdad between 1963 - 68 has been reported as 54,703, which is certainly a figure well below the actual number who migrated. It covers only urban migrants who left their settlements. Fallahin migrants have never informed the authorities about their movements, especially not after 1963, since they are naturally afraid of the government's reaction and penalties. Because of that some of the migrants, though small in number, were settling for the first time in tenements in central areas of the city. The majority settled with their relatives in al-Thawrah and al-Shulah until they found their way into the city and only a few who have no relatives have dared to erect new sarifahs.

The registered annual average of migrants to Baghdad between 1963-68 was more than 9,000 as is shown in the following table. . .

(Figs. 9.13, 9.14)

Table 9.11: Migration to and from Baghdad Liwa in the period 1963-1968

Year	Migrants to Baghdad	Migrants from Baghdad
1963	25,292	11,956
1964	9,238	4,665
1965	3,271	3,037
1966	2,738	4,364
1967	5,999	4,843
1968	8,465	5,602
Total	55,003	34,467

Source: Directorate General of Civil Affairs, Baghdad (1971) Official Reports.

From this table it appears that migrants from Baghdad were less in number than those coming to Baghdad. The number to leave Baghdad was 34,467 making an annual average of more than 5,000.

Fig. 9.14 shows the pattern of the registered in and out migration in Iraq by liwa in 1968 as well as the registered migration to and from Baghdad during the period 1963 - 1968. It shows that Baghdad tops the other liwas in both kinds of migrants, whereas Arbil Liwa in the north was the least mobile liwa. Amarah and Diwanayah however, were the only liwas which have lost some of their inhabitants by the high rate of out-migration.

There are no figures for the new migrants, but the Master Plan of Baghdad in 1969 estimated the number of sarifahs and kukhs, i.e. substandard houses at 5 - 10 per cent of the total number of Baghdad houses (175,000 in 1965).⁷⁴ Accordingly the number of Sarifahs will range between 8,750 - 17,500 as shown in the following table.

Table 9.12: The Locations of the new sarifah colonies and their estimated numbers:

Area	Estimated number of sarifahs
Around the fringe belt of old Baghdad on either side	3,000
Baghdad al-Jadidah	1,800
Karradah al-Sharqiyah	1,500
Karradat Mariyam, Western suburbs, and Washash	3,000
Kadhimiyyah	3,800
Total	13,100

Source: Writer's estimate based on Polservice Consulting Engineers Master Plan of Baghdad, Warsaw 1 (1969).

In Kadhimiyyah sarifahs occupy 24 hectar.⁷⁵ This means that the average

number of sarifahs per hectare is more than 198.

As surveyed by the writer, the new sarifahs are not different from those prior to 1963, apart from the fact that they are now without exception, located within the built-up area (Fig. 9.1) . Because of their fear of governmental prosecution many migrants have developed their kukhs inside cemeteries, such as the al-Ghazali sarifah area, and on remote sites such as along al-Khir canal. Al-Ghazali sarifah camp was surveyed as being representative of the new sarifah areas, and some of its families were interviewed in the summer of 1971.

Many of the graves in al-Ghazali cemetery have disappeared. Their bricks have been used to build new slum structures. It is strange when one wanders in this growing settlement, to see a few concrete graves scattered between the kukhs. Migrants had failed to demolish such well built graves.

Fallahin chose cemeteries as their sites because they rightly expected no objection as long as there were no complaints from individuals either from al-Awqaf department or from Amanat al-Asimah. Furthermore, some of these cemeteries are over-used and further burials would take place at other sites. If a decision to remove the sarifahs from the publicly owned cemeteries was made it would take years to put it into effect.

Forty families were interviewed; it appeared that more than 70 per cent of them migrated for economic reasons, while only 0.5 per cent came for educational reasons.

Table 9.13: Motives of the new (post-1963) migrants in the surveyed sample of al-Ghazali Sarifah Camp:

Motive	%
Better payment	70.2
To follow relations	10.8
Better social services	9.2
Military and Police services	6.8
Health factors	1.5
More recreational facilities	1.0
For education	0.5
	100.0

Source: Fieldwork 1971 Table K.

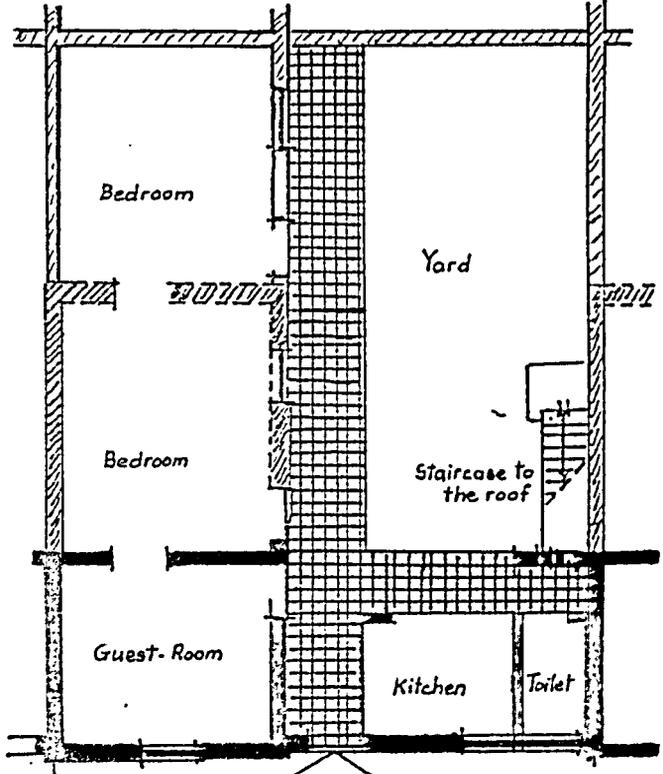
None of the surveyed kukhs had bathing facilities and only two of them had primitive latrines. Filth and evil smelling liquids are seen everywhere beside these illegal structures. As they are so close to the built-up areas they are the source of greater health risks to the city. 75 per cent of the kukhs used bricks and mud as building materials. The plan of these kukhs does not differ from that of the pre-1963 kukhs. It is interesting to note that the appearance of kukhs and sarifahs can be used as a guide to indicate the place of origin of the migrants as certain tribes built their huts in the traditional styles of their former villages. The new kukhs are exclusively occupied by new fallahin migrants compared with the old shanty towns, which were shared with some urban poor to a limited extent. Beside the kukh encampment of al-Ghazali, and beyond the eastern dyke, between al-Thawrah Road and the southern wall line, a horribly unhealthy open market has developed, where one can find all kinds of unhygienic cheap foodstuffs such as fish, meat, vegetables,

low-grade fruit, sheep, ^{eggs} together with second-hand household tools, etc. Swarms of flies and stagnant pools are found near the squatting sellers who are mainly migrants living in al-Thawrah. The Directorate General of Health of the Capital is little more than half a kilometre away from this primitive and dangerous market!

As already seen, there are big discrepancies between the estimates of kukhs and sarifahs and their inhabitants before 1963. However, about 55,000 sarifahs and kukhs were knocked down within the Amanat al-Asimah boundaries during 1963.⁷⁶ As mentioned before the families who occupied these sarifahs and kukhs were transported to al-Thawrah east of the eastern bund and al-Shulah to the west of Kadhimiyah. It was possible to carry out this large-scale action, because the completion of the new flood-control facilities after 1956 on the Tigris and its tributaries above the city, freed Baghdad from the constriction of its encircling dykes. As a result Baghdad has now more than quadrupled in area in order to house migrants and urban families aspiring to a suburban life.

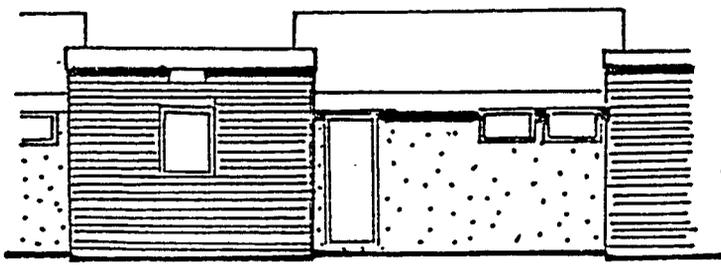
The sites of al-Thawrah and al-Shulah are flat, allowing easy development and are not too far from the traditional centre. The houses or plots were distributed at random: beneficiaries have not been chosen on any basis of fundamental qualification such as time spent in Baghdad by the person, his place of work, number of family members, income, etc. Of the employed people in the families interviewed 24 per cent and 51.7 per cent were working at distances of more than 15 and 10 km respectively. The area of al-Thawrah was 5,800 domums of state land. It is about 5 km from the Old Town. The first step was taken by the Ministry of Public Works and Housing, when it built 911 houses in sector No. 4 in 1960/1961. These houses

Fig.9.16 One Type of House in al-Thawrah



Ground-floor

Concrete Walls Walls built of brick and juss.



Front elevation

0 1 2 3 m

Fig. 9.15



a. A typical residential street in al-Thawrah



b. A major traffic street in al-Thawrah
(after Azeez)

were distributed to low-income civil servants, most of whom were migrants. The remaining land was sub-divided into lots of a standard size of 144 sq. m. Each family was given one lot free of charge on which they were to build their own house.

In compliance with the government decree owners built concrete-floored, brick-walled homes in place of their former hovels. The average cost of the houses of families interviewed in the field survey was 483.6 I.D.

Government engineers provided plans and supervision; and government banks arranged loans for these small inexpensive structures. The percentage of interviewed families benefitting from the bank loans was 35 per cent. This means that a high percentage of them were wealthy enough to build their new houses.

The average covered floor area of the surveyed houses in al-Thawrah was 73.5 sq. m consisting of one to four rooms, with a backyard attached (Fig. 9.15, 9.16). The majority of the houses of the interviewed families have 1 to 3 rooms. They represent 75 per cent of the total houses.

Table 9.14: The distribution of the surveyed houses according to the number of rooms in al-Thawrah and al-Shulah.

	<u>Al-Thawrah</u>		<u>Al-Shulah</u>	
	No.	%	No.	%
One room	1	5	1	5
Two rooms	7	35	8	40
Three rooms	7	35	6	30
Four rooms	5	25	4	20
Five rooms	-	-	1	5
	20	100.0	20	100.0

Source: Fieldwork 1971. See Appendix A Table 0a

Fig. 9.17

Two representative streets in al-Shulah. The first building on the right side of (a) is a local gahwah (coffee house).



a.



b.

The plots were distributed in stages. At first the government distributed 6,000 plots, then 4,350 plots and finally another 6,000 plots. A total of 16,350 plots in al-Thawrah were thus distributed between 1961 and 1964. In 1968/69, the number of distributed plots jumped to 58,210. 50,471 were distributed by the Ministry of Public Works and Housing and 4,496 by Baghdad City Council. The latter were distributed to the poor citizens of Baghdad, but not to migrants. At present, al-Thawrah, has expanded to provide 85,000 plots for former sarifah and other low-income families.⁷⁷ Before 1963, plots were distributed to any citizen who wanted to live in al-Thawrah and al-Shulah, though sarifah dwellers constituted the highest percentage of beneficiaries.

It was planned that al-Thawrah and al-Shulah would be provided with a sufficient number of primary and secondary schools, police stations, public baths, post offices, markets, religious institutions and other social facilities. At present, however, there are 45 primary schools for girls and boys, and 17 intermediate and secondary schools in al-Thawrah; while al-Shulah has only 6 primary schools and 3 intermediate and secondary schools. The inadequacy of the schools in these settlements is revealed by the fact that a high percentage of the pupils of both public and private schools in Baghdad are derived from these two settlements, especially on the East Side. It can also be seen in the low percentage of literate people in these two settlements.

The following table shows that only 0.5 per cent and 0.97 per cent of those interviewed in al-Shulah and al-Thawrah had graduated from intermediate schools. The percentage of college graduates in al-Shulah and al-Thawrah were respectively 0.002 per cent and 0.08

per cent. There were no female graduates in al-Shulah while al-Thawrah had only one. In the opinion of many of the migrants girls should not be as free as urban girls. The illiteracy percentage was high in both settlements, being 44.2 and 42.0 in al-Shulah and al-Thawrah respectively.

Table 9.15: Literacy in al-Thawrah and al-Shulah settlements in 1968/69:

Literacy status	Al-Thawrah				Al-Shulah			
	Males	Females	Total	%	Males	Females	Total	%
Children	1,315	1,172	2,477	29.60	1,562	1,467	3,029	29.80
Illiterate above 7 years old	1,318	2,195	3,513	42.00	1,746	2,754	4,500	44.30
Read and write without qualifications	1,391	568	1,959	23.46	1,743	556	2,299	22.70
Primary school graduates	229	39	268	3.40	243	26	269	2.60
Intermediate school graduates	76	5	81	0.97	43	4	47	0.50
Secondary school graduates	33	2	35	0.42	8	1	9	0.09
College graduates	6	1	7	0.08	2	-	2	0.02
Technical or professional certificate holders	5	1	6	0.07	7	1	8	0.08
TOTAL			8,346	100.0			10,163	100.0

Source: Compiled from the unpublished results of the field survey in al-Thawrah and al-Shulah settlements in 1967/68 by the Ministry of Labour and Social Affairs. (Baghdad (1971).

Al-Shulah, (Figs. 9.1, 9.6, 9.17) 2 km. west of the Baghdad-Mosul highway, was planned to rehouse the West Side sarifah dwellers. However, many of these have settled in al-Thawrah. The following table

shows the former sarifah colonies of the families interviewed in al-Thawrah.

Table 9.16: The former sarifah settlements of interviewees in al-Thawrah

Former Sarifah settlement	%
Al-Asimah	10.3
Rustumiyah	3.4
Sheikh Omar	10.3
Iwadhiyah and Bustan Muhsin	10.3
Tel Muhammad and Tel Harmal	13.8
Kadhimiyah	6.9
Sheikh Ali (Rahmaniyah	20.7
Shakiriyah and Karradat Mariyam	24.3

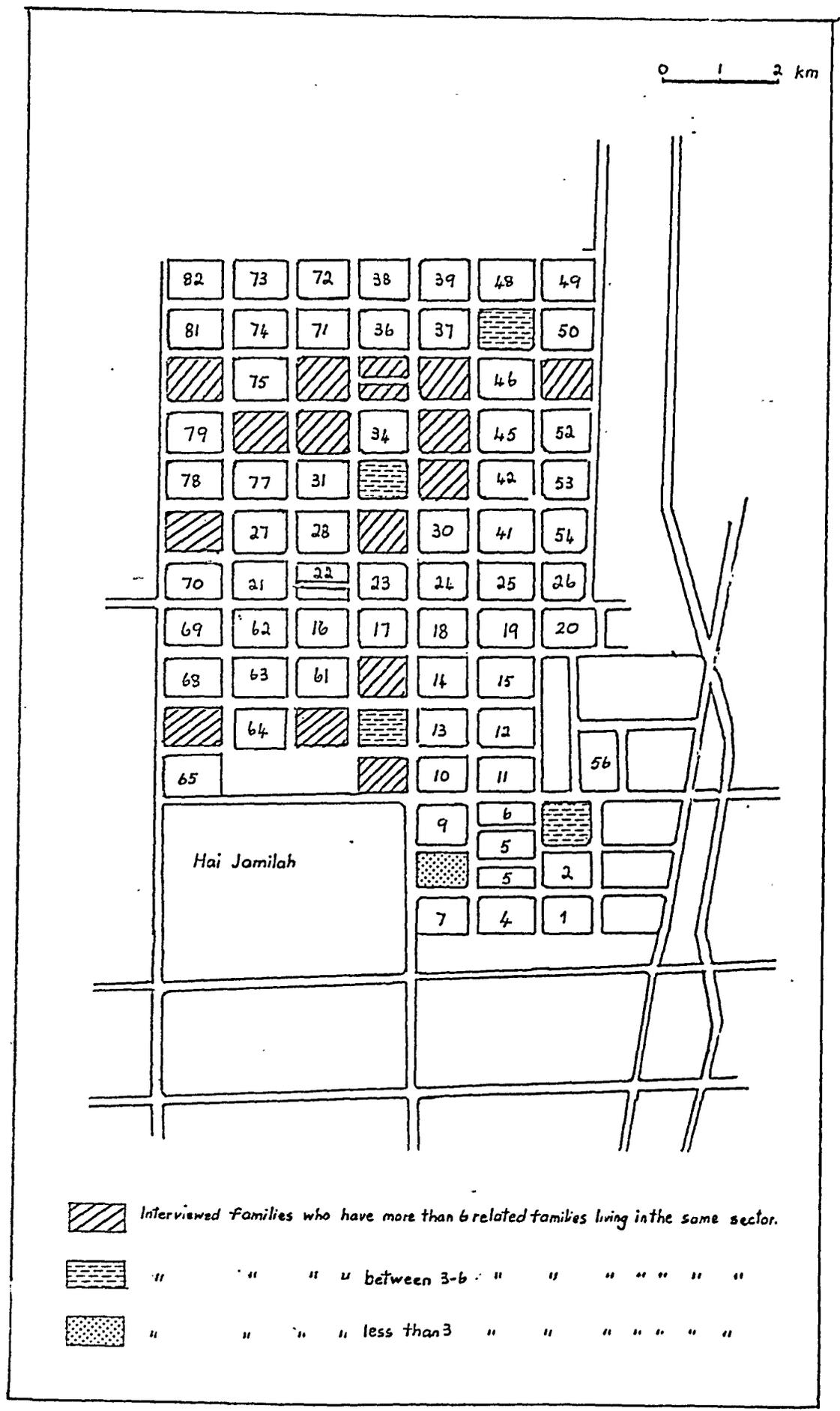
Source: Fieldwork 1971, See Appendix A, Table L.

It appears that in al-Thawrah 95 per cent of the surveyed houses were owned by their occupants. The average number of families per house was 1.45. 20 per cent of the houses were occupied by three families each, while 10 per cent of the surveyed houses were inhabited by two families each. The average area per person was 12.7 sq. m.

All the surveyed houses were single storeyed. 5 per cent of the houses have a dining room, while 65 per cent of them have guest rooms. 65 per cent of the houses have flat roofs with surrounding brick parapet where families sleep. The remainder of the houses lacked roof parapets as the inhabitants sleep in the courtyard.

The new houses are better than their sarifahs; This is expressed by the fact that 100 per cent of the interviewed houses are provided with water supply and electricity, 75 per cent have bathrooms, and all are provided with toilets. The construction of these houses is very bad, 55 per cent of the surveyed houses having been repaired from one to three times each.

Fig. 9.18 Al-Thawrah Settlement and its Tribalism



The data from the field work proved that not all the details required by the government have been insisted upon by the authorities. Presumably the outside appearance satisfied the authorities.

Houses might be built according to various simple designs prepared by the Ministry of Public Works and Housing. Temporary kukhs and sarifahs were allowed to be erected beside the plot while construction was taking place.

Virtually all houses are provided with ovens^(tannurs). The oven here is the massive flat-topped type in which traditional circular bread is baked daily. 100 per cent of the interviewed families in both al-Thawrah and al-Shulah have these tannurs, 80 per cent of the tannurs in al-Thawrah were in the courtyard, while 20 per cent were on the roofs of the houses.

The number of sarifah families who settled in al-Shulah was estimated at 6,000 in 1961. However, the number of distributed plots has now reached 13,000.⁷⁸ Houses were built to the same standards as those in al-Thawrah (Fig. 9.18).

Both localities are supplied with electricity and water indicating a relative improvement in the hygiene of the new settlements. 100 per cent of the surveyed houses in al-Thawrah were provided with purified pumped water and electricity. However a sewage system has not been constructed in either settlement .

Street plans of these towns are unlike the pattern found in their former sarifah settlements. They are now of a rectilinear geometrical pattern (Fig. 9.18) of intersecting lines. The residential areas are thus divided into regular sheet blocks. None of the streets have pavements and most are not surfaced as yet - a fact of which 41.4 per cent of the interviewed families complained.

Empty plots between the houses are supposed to be gardens or parks. Instead they are now ditches filled with lagoons and filthy water, both of rain and from the surrounding houses, whose inhabitants openly throw their dirty water into the street and into these vacant plots. Families dig soil from them to erect walls, additional rooms or ovens, increasing thus the size of such ditches, which become dumping places for rubbish so creating a health hazard. The spatial distribution of the supposed gardens indicates in fact the present distribution of unhealthy drains and dunghills.

Traffic congestion occurs only in the major streets. Almost exclusively the vehicles seen are state-owned or buses and taxis for hire. None of the interviewees owned a private car.

In both settlements a few social institutions have developed for the migrants, such as *husayiniyahs* (Shiah mosques), mosques and coffee-houses. All the interviewees frequent mosques in the area and 96.6 per cent of them regularly frequent the local coffee-houses.

On the other hand both localities lack many facilities as shown in the following table.

Table 9.17: Facilities required by the interviewed residents of al-Thawrah.

Kind of facility	% of the total families
More educational institutions	6.9
More health facilities	6.9
Social clubs	6.9
Sewerage	10.3
Street paving	41.4
Public bath (Hammam)	13.6
Families without complaint	14.0
	100.0

Source: Fieldwork 1971: See Appendix A Table H.

The complaints of the interviewed families were expected, as there is a big gulf between what was proposed and what has been carried out. At the present and because of this situation, it is doubtful whether the new settlements are much better than the former sarifah settlements. For example, 160 schools were proposed in al-Thawrah and only 62 have been built, and 9 sports fields were proposed in al-Shulah but none have been made. Nor were any of the suggested 16 public gardens developed. The only two sports clubs in al-Thawrah have emerged only recently as they are run by the people themselves, in unsuitable and inconvenient buildings and grounds.

Markets in al-Thawrah occupy vacant land, being temporarily authorized by Amanat al-Asimah. Each suq has 200 - 400 small wooden or metal stalls of 2 x 2 m (Fig. 9.12'c). These constitute two parallel rows giving a square patterns. The main items provided in these market are vegetables, fruit, meat, fish, household stuffs, textiles, second-hand clothes, shoes, etc., all of which are of low-grade quality, being thus very cheap compared with the prices in suqs located in well-to-do residential areas. 100 per cent of the interviewed families in al-Thawrah do their daily shopping in the growing markets of the locality, while 82.8 per cent of them frequent the bazaar area for luxury goods.

Income and expenditure of migrant families in their new settlements.

The annual income per migrant family in their new settlements has increased considerably. This can be seen in the following table.

Table 9.18: The distribution of annual income in al-Thawrah according to family size.

Annual income I.D.	Family size				
	2 - 4	5 - 6	7 - 8	9 - 10	11 - 12
Less than 100	5	2	1	1	
100 - 150	-	-	-	-	-
150 - 200		2	2		
200 - 250		1	1		
250 - 300	1	-	-	-	-
300 - 350	1	-	-	-	1
350 - 400	1		2	1	
400 - 450	-	-	1	-	-
More than 450		3		1	2
Total	8	8	7	3	3

Source: Fieldwork 1971. See Appendix A Tables A, E.

According to the survey of the Ministry of Labour and Social Affairs 1968/69, 71.3 per cent of the families interviewed in al-Shulah and 63 per cent of those in al-Thawrah had an annual income of less than 250 I.D.⁷⁹

The nature of expenditure of the migrants in their new houses shows some change compared with the migrants' former sarifah and kukh period. This is related to the increase of their income and also to their new housing condition. However, the field survey showed also that foodstuff continued to be the main item, accounting about 50 per cent of the total expenditure of the family.

Electricity and water supply became more important to them. The sarifans were without electricity, and safe water was supplied either from a few scattered taps installed in the main streets, or directly from the canals and river. However, these two items constituted

5.4 per cent of the total family expenditure, while the sarifah dwellers were paying 0.3 per cent of their expenditure on electricity in 1961. Transport expenses have increased, from 2.6 per cent of the family expenditure in 1961 to 10.2 per cent of the interviewed families' budgets in 1971. The increase reflects that no consideration was given to the place of work when the sarifah dwellers were rehoused. The new settlements are further away from the centre than the former shanty towns.

Furniture became more important as the houses have completely changed. The new brick-built houses are mainly of one to three rooms, are owned by their occupiers who felt the necessity of buying some sort of furniture, absorbing a high percentage of their expenditure, 7.3 per cent in 1971 whereas it had been 4 per cent during the sarifah period in 1961.

The expenditure on fuel decreased as electricity began to be used for lighting. The animal dung charcoal has been replaced by more efficient heating devices.

Table 9.19: Average monthly expenditure per household of the interviewed families in al-Thawrah according to the type of expenditure in 1971.

Type of Expenditure	I.D.	Fils	%
Foodstuff	15	330	48.9
Clothing	2	500	10.7
Transport	2	450	10.2
Recreation	1	950	8.4
Furniture	1	540	7.3
Fuel and electricity	-	910	6.0
Medical treatment	-	750	4.0
Safe water	-	190	1.4
Other expenditures	-	395	3.1
<i>Total</i>	<i>26</i>	<i>67,015</i>	<i>100.00</i>

Source: Fieldwork 1971: See Appendix A Table G.

Have the migrants been absorbed into urban life?

Migrants in al-Thawrah and al-Shulah maintain their distinct pattern of life, by comparison with that of the urban citizens. This was also the case when they were living in their former sarifahs. The family life of the migrants works within their own tribal frame. Rehousing themselves, side by side with their animals, fallahin brought their whole rural way of life with them to Baghdad.

When they were rehoused they felt the social imbalance and became afraid of losing their strong tribal ties. Accordingly they began to find a way to rebuild^d their tribal organizations. Houses or plots were exchanged by the occupants clandestinely as this is illegal. 51.7 per cent of the interviewed families in al-Thawrah have exchanged their houses to be near to their relatives. Thus the families of certain tribes have been able to regroup themselves. The result^d was that the whole of the accustomed social and residential system has been recreated. This regrouping process results in a bigger concentration of migrants from particular tribes than could arise by chance. For example, Section 264 in al-Thawrah is inhabited now mainly by members of the Slaimah and Baidhan tribes and Section 74 by those of the al-Darra^j tribe.⁸⁰

It is^a well known fact that such famous tribes as Bani-Lam, al-Bu-Muhammad, al-Azairij, al-Sawid, al-Bahadil, al-Bu-Amir, al-Sadun, al-Bu-Darra^j, etc. have developed their own enclaves of brick-built houses. This kind of residential grouping reveals that the urban society of Baghdad has only a limited influence on the migrants' social life.

The following table shows how far the migrant families have preserved their tribal and social traditions.

Table 9.20: The distribution of interviewed families of al-Thawrah according to the number of related families living in the same section (Fig. 9.18)

No. of related families living in the same section	No.	%
less than 3	1	3.4
3 - 6	7	24.1
7 - 8	21	72.5
	29	100.0

Source: Fieldwork 1971, See Appendix A Table C.

100 per cent of those interviewed put proximity to relatives as a decisive factor in mahallah choice.

By this grouping they tend to reproduce the conditions of life to which they were accustomed. They feel more secure when they collect in certain parts of the city with people having the same backgrounds. In Cairo, migrants usually settle in parts of the city not very different from their home area physically and socially, while in Baghdad they mainly follow their relatives. In al-Thawrah and al-Shulah, strangers are easily recognized by the inhabitants. It is not uncommon that these strangers will be stopped by one of the inhabitants and asked the reason for their presence. This will not happen in the urbanized suburbs of the city. Most of the migrant tribesmen developed a distinct social sub-system within the city of Baghdad. Some tribes have evolved certain agreements signed by the heads of branches of the same tribe. These agreements cover several items such as the appointment of a chieftain (sheikh), the fixing of marriage costs, and the fixing of blood money which should

be collected by the members of the tribe in equal shares. Also the agreement fixed the cash payment that should be paid to an injured member within the same tribe, if a local quarrel takes place, and this usually is not more than 20 I.D. If a member of the tribe has been killed, the blood money obtained will be divided, one third going to the family of the person killed, the rest being divided between the other tribe members. Some agreements have more details dealing with other aspects of life.⁸¹ Unlike Korman in Iran, the evidence from Baghdad suggests that the impact of modernization in the city has altered the economic pattern of the migrant family rather than social or tribal organization.⁸² Any fallah migrant who deviates from the tribal norms may suffer punishment and ostracism. Traditional family patterns have been widely maintained, while occupations have changed completely.

As evidenced by the fieldwork, the family size of the migrants of al-Thawrah has increased due to medical and economic improvements. This has helped to maintain the tribal custom of increasing the size of family, indicating that they are not yet urbanized, since a family in urban areas for economic reasons tends to reduce its size. The fertility ratio in some sarifah areas was 966.3, while for Baghdad it was 788.5.⁸³

The average size of the interviewed households in al-Thawrah was 6.2. It is larger than that of the country as a whole, where the average family size was 5.2 in 1957. The percentage of families of more than 8 persons was 34.4 in al-Thawrah.

The potential labour force is high in both settlements as more than 41 per cent of the interviewed people in al-Thawrah were between 15 - 44 years old and only 11 per cent were over 44 years of age.

Table 9.21: Size of interviewed families in al-Thawrah.

Size of family (persons)	No. of families of this size	% of Total Families	Total No. of occupants	% of total of occupants
1	-	-	-	-
2	3	10.344	6	3.30
3	3	10.344	9	4.95
4	3	10.344	12	6.59
5	3	10.344	15	8.24
6	3	10.344	18	9.89
7	4	13.800	28	15.38
8	3	10.344	24	13.19
9	3	10.345	27	14.84
10	1	3.450	10	5.49
11	3	10.345	33	18.13
Total	29		182	

Source: Fieldwork 1971, See Appendix A Table A.

Furthermore, the migrant in Baghdad still prefers to marry one of his relatives, a tendency which is less prevalent among the townspeople of the city. More than 79 per cent of the interviewed men in al-Thawrah married relatives. The percentage of men with more than one wife was over 13 per cent. Thus the traditional tribal and rural habit of marrying relatives is still maintained in the new urban context.

Table 9.22: Marriage status and preference according to the interviewed men in al-Thawrah:

	Totals	Married to relatives	Married to non-relatives
One wife	25 (86%)	21 (72%)	4 (14%)
Two wives	4 (14%)	2 (7%)	2 (7)

Source: Fieldwork 1971, Appendix A Table B.

Migrants of al-Thawrah and other places have sent for tribal leaders from their homeland to join them in their new life. Some of the migrants still feel loyalty to their leaders. Leaders here are relatives and inherited the leadership. They are different from those sheikhs who became absentee landlords. This means that migrants have two types of sheikh, the feudal landlords and tribal ones who follow the tribal lines in their relationship with the fallahin. Fallahin help their tribal sheikhs in building al-mudhif (guest house) for the tribe and sometimes even supply them with their daily needs.

According to their place of origin, migrants here show the same characteristics as in their former sarifah areas. 69 per cent of the interviewed families in al-Thawrah were from Amarah. 65.5 per cent of them have moved to Baghdad directly while 27.6 per cent have moved twice before settling in Baghdad.

The following tables show the origins of interviewe migrant families and their periods of residence in Baghdad.

Table 9.23: Migrant families in al-Thawrah according to their place of origin.

Liwa of origin	No. of families	%
Amarah	20	69.0
Kut	6	20.7
Diyala	1	3.4
Baghdad Qadhas	2	6.9
	29	100.0

Source: Fieldwork 1971, Appendix A Table J.

Three of the interviewed families migrated to Baghdad more than 24 years ago. Five of the families have followed their relatives in the last five years.

Table 9.24: Period of residence in Baghdad.

Period of Residence	No. of families	%
5 years	5	17.24
5 - 9	2	6.90
10 - 14	3	10.34
15 - 19	9	31.03
20 - 24	7	24.14
> 24	3	10.35
	29	100.00

Source: Fieldwork 1971, See Appendix A Table J.

The migrant families still maintain strong links with their home area, and 51.3 per cent of the interviewed families visit their home area not less than once a year.

Moreover, 100 per cent of the interviewed families provide accommodation for their relatives when these visit Baghdad. 65.5 per cent of them are supporting close relatives in their place of origin, 34.4 per cent of these support their relatives regularly. The reasons for financial assistance were poverty (65.5 per cent), social tradition (31.03 per cent) and absence of social security (27.59 per cent).*

* Some of the families gave more than one reason for the financial support of their relatives, which were included in the above percentages.

1. A. Al-Hilali, The Rural-to-Urban Migration in Iraq, Baghdad (1958) 19 First edition (in Arabic).
2. H. Jawad, Al-Tarkib al-Ijtimai Fi al-Iraq, (The Social Structure of Iraq) Bahgdad (1946) 56; J. Gulic, Baghdad: Portrait of a City in Physical and Cultural Change, Journal of American Institute of Planners XXXIII, (1967) 252.
3. International Bank for Reconstruction and Development, The Economic Development of Iraq, Baltimore (1952) 143.
4. M. A. ElBadry, Trends in the Components of Population Growth in the Arab Countries of the Middle East; A survey of Present Information, A Paper delivored at the Conference on Demographic and Economic Trends in the Developing Countries, organized by the Social Science Research Council and Population Council, New York (1962) 181.
5. International Bank for Reconstruction and Devepment, op. cit. 55.
6. Eugen Wirth, Die Lehmhüttensiedrungen der Stadt Baghdad, Ein Boitrag zur Sozialgeographie orientalischer Städte, Erdkunde v. 8 p. 4, (1954) : 312.
7. K. Al-Midfai, Baghdad, a Report on the Development, the Probloms and the Structure of the City of Baghdad, Baghdad (1961) (Mimcographed), 27.
8. Minoprio, Spencely and P. W. Macfarlane, The Master Plan of the City of Baghdad, Report (1954) 3.
9. Al-Hilali, op. cit. 47.
10. Bureau of Statistics, Housing census of 1956, Baghdad, (1951), Ministry of Interior, letter No. 2388 Feb. 11 (1956), Baghdad, Al-Hilali, op. cit. 161.

11. Directorate General of Civil Affairs, Magazine of the Ministry of Social Affairs, No. 14, the third year (1958) 9 - 17.
12. M. M. Azeez, Migration From Amarah Province, Iraq, 1955 - 1964, A. Thesis submitted for the Degree of Doctor of Philosophy in the University of Durham, April (1968) viii .
13. D. G. Philips, Rural-to-Urban Migration in Iraq, Economic Development and Cultural Change (1957) 412; Doreen Warriner, Land and Poverty in the Middle East, London (1948) 181.
14. Doxiadis Associates, Bulletin No. 1 July, 1958, (Baghdad) 4.
15. F. Baali, Social Factors in Iraqi Rural-Urban Migration, American Journal of Economics and Sociology, xxv (1966) 359 - 364.
16. Ministry of Economics, op. cit. (1956) 12.
17. Al-Midfai, op. cit. 27.
18. Orin D. Parker, The housing transformation from reed to mud to brick continues as Iraq builds, View Point Magazine, 4 (1964) 9
19. Directorate General of Civic Affairs, the monthly magazine of the Civil Affairs (1968).
20. International Bank for Reconstruction and Development, op. cit. 132 - 133.
21. G. L. Harris, Iraq, its People, its society, its culture, New Haven, (1958) 197.
22. Wirth, op. cit. 313.
23. M. N. Quint, The Idea of Progress in the Iraqi Village, The Middle East Journal, 12, (1958) 370.
24. International Bank for Reconstruction, 377, table 1.
25. Azeez, op. cit. Fig. 173
26. Ministry of Planning, Central Bureau of Statistics, Annual Abstract of Statistics, 1958, 1967, 420 - 421.

27. Mutassarifiyat Baghdad; (Governorate of Baghdad) Projects of the Local Administration for the Year 1956-57, Baghdad 1958.
28. J. P. Gibb, A Note on Industrial changes and Migration, American Sociological Review, *April, (1964) Vol. 29, 266-270*
29. J. M. Al-Khalaf, Jughrafiyat al-Iraq, (Geography of Iraq, physical economical and human), third edition, Cairo (1965) 431.
30. Dr. T. Al-Shaibani, Land Ownership in Iraq, Baghdad (1958), pp. 12 - 14; Ministry of Planning, Central Bureau of Statistics, Result of the Agricultural and Livestock Census in Iraq for the year 1958/1959, Baghdad (1961) pp 6, 311.
31. Baali, op. cit. 364; Adams, op. cit. pp 157 - 158.
32. F. Al-Ansari, The Population of Iraq, A Comparative Geo-Demographic Study, Damascus (1970) 143.
33. Azoez, op. cit. pp 196 - 197.
34. Baali, op. cit. pp 359 - 360; Al-Ansari, op. cit., 410.
35. J. James, Physical Planning in Iraq, Baghdad (1971) ii, (Mimeographed).
36. Mutassarifiyat Baghdad, (Governorate of Baghdad) Projects of the local Administration, Baghdad (1967) pp 176 - 177.
37. Baali, op. cit. pp 362 - 364; Al-Thawrah al-Arabiyyah Daily Newspaper, December 14 (1964) Baghdad.
38. E. T. Hall, The Hidden Dimension, London (1969) 156.
39. Unpublished Records of Land Registration Departments (Tapu) of al-Mansur and al-Karraddah al-Sharqiyah.
40. Principal Bureau of Statistics, The Household Budget Enquiry in the City of Baghdad and Environs, (1954) 5.
41. Doxiadis, op. cit. (1958) 5.
42. Philips, op. cit. 415.
43. The author's field work (see Appendix A, Table E.)
44. Al-Midfai, op. cit. 28.

45. Isis Raghob, Pattern of Urban Growth in the Middle East, ed. G. Breeze, The City in Newly Developing Countries, New Jersey (1969) : . . 118 - 119., Baali, op. cit. 362, Azeez, op. cit. 285.
46. Ministry of Economics, op. cit. (1954) 19.
47. Al-Midfai, op. cit. 28.
48. Ministry of Planning, Central Bureau of Statistics, Section of Research and Publicity, The Household Budget enquiry in the city of Baghdad and its Environs, Baghdad (1962) 9.
49. Wirth, op. cit. . . 315 - 316.
50. Philips, op. cit. 420
51. Governorate of Baghdad, op. cit. 177.
52. Azeez, op. cit. . . 320 - 321 and the Annual Abstracts of Statistics for the years 1965 - 1967.
53. Ministry of Planning, Report on How to Integrate the Educational Planning with the Economic Planning, Baghdad (1969) 27 (in Arabic).
54. Al-Ansari, op. cit. 146.
55. Isis, op. cit. 107.
56. Ministry of Economics, op. cit. (1954) 15; Azeez, op. cit. 280 table 8.4.
57. S. G. Shiber, New City Horizons for Old, Kuwait (1966) 87.
58. Doxiadis, op. cit. (1958) 4.
59. Ministry of Economics, Principal Bureau of Statistics, Report on the Housing Census of Iraq, 1956, Baghdad (1956).
60. Isis, op. cit., op. cit., . . 118 - 119.
61. J. Abu-Lughod, The Migrant Adjustment to City Life: The Egyptian Case, ed. in G. Breeze, The City in the Newly Developing Countries, New Jersey (1969) 384.

62. K. Hasib, Taqdir al-Dakhl al-Qawmi Fi al-Iraq (Estimation of the National Income of Iraq) 1953 - 1961, Beirut (1963) 277.
63. D. G. Adams, Current Population Trends in Iraq, Middle East Journal 10, 2 (1956) 57.
64. Ministry of Economics, op. cit. (1956)
65. Langley, Industrialisation of Iraq, Translated into Arabic by M. Al-Tai and K. al-Ani, Baghdad (1963) 314.
66. Ministry of Planning, Central Bureau of Statistics, Annual Abstracts of Statistics, 1958 - 1968.
67. Azeez, op. cit. 266.
68. Ministry of Economics, op. cit. (1956) 12, Table 13 and 23;
Azeez, op. cit. 265, table 8.2
69. Isis, op. cit. 112.
70. Shiber, op. cit. (1966) 28.
71. Adams, op. cit. 32.
72. Adams, op. cit. 33.
73. Wirth, op. cit. 314 - 315.
74. PolSERVICE, Master Plans of Baghdad, Warsaw 1 (1969) vii - 3;
PolSERVICE, Master Plan of Baghdad, Kadhimiyah Central District, Short Report, Warsaw (1967).
75. PolSERVICE, Kadhimiyah op. cit. (1967) 11.
76. Azeez, op. cit. 266.
77. Ministry of Public Works and Housing, Directorate General of Housing.
78. Ministry of Public Work and Housing, Directorate General of Housing.
79. Ministry of Labour and Social Affairs, op. cit.
80. Field Survey and the District Unit of Amanatal-Asimah, Baghdad (1971)
81. Al-Hilali, op. cit. 66 - 67.
82. P. W. English, City and Village in Iran: Settlement and Economy in the Kirman Basin, Madison and London (1966) 113; Baali, op. cit.

(1966) 50.

83. Azeez, op. cit. Table 2, p. 324.