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Manpower Report 1/82

MANPOWER AND DEVELOPMENT IN THE SULTANATE OF OMAN

By

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PREFACE

Manpower Planning is generally considered as : the process of determining present and future manpower requirements, and developing education and training programmes to meet these needs. This simple definition of manpower planning hides a complex process. The assessment and projection of manpower demand and supply, evaluation of alternative courses of action, and specification of human resource development plans based on assumptions about the future course of events is a difficult process. In fact, planning for the development of human resources is one of the most challenging tasks facing planners. Human resources development has a far reaching impact upon the overall economic growth of a country, as well as on individual organisations and departments. The results of action programmes are not seen immediately; there is a considerable time lag. Moreover, the actual execution of plans for human resources take time, during which the initial assumptions under-lying the plan might change. Lastly, manpower planning has to consider the expectations and motivations of populations and their workforces.

Manpower planning should, therefore, be not considered a mere estimation process of the number of workers required, but a complete system of analysis and decision making, governing all facets of future labour market administration. Manpower planning acts, therefore, at various levels, from the national (where the problem is of producing men and women with appropriate skills to match the requirements of the economy), to the institutional and departmental level (where staff have to be matched with objectives and profitability), and the individual (individuals have to obtain suitable opportunities for employment).

In the Sultanate of Oman, interest in manpower planning is further stimulated by the severe shortage of skilled and qualified manpower generated by economic growth, as well as the need to raise the quality and improve the effectiveness of labour force. The Second Five Year Development Plan has incorporated human resources development in the planning process. However, the complexity and magnitude of the planning effort needed for human resources development requires technical capacities beyond the capabilities of a single planning agency. Its success will depend upon the development of a cooperative and coordinated effort by all concerned institutions.

Against this background, a Manpower Planning Unit, within the Directorate General of Vocational Training, Ministry of Social Affairs and Labour was established in 1982, with the Technical Cooperation of the World Bank. The purpose of the Manpower Planning Unit is to facilitate awareness of the manpower implications of economic growth, and encourage the planning of human resources development in the Sultanate of Oman. The rapid - though uneven - economic growth of the past decade presents a great challenge which is exacerbated by severe shortages of national manpower. Despite the unprecedented expansion of the education and training system, economic development has thus far been facilitated largely through imported labour and expertise. Thus the ultimate purpose of the Manpower Planning Unit is to help plan for the optimal development of Omani human resources, facilitating the maximum participation of Omanis in the development of the Sultanate.

This paper represents the first of a series of reports which will be produced by the Manpower Planning Unit. By projecting requirements for the many extra workers needed under the Second Five Year Development Plan, this paper demonstrates the need for and background to systematic planning of a human resources development in the Sultanate. The paper is based upon an initial report on the labour market implications of the Second Five Year Development Plan prepared under the Technical Assistance agreement between the Ministry of Social Affairs and Labour and the World Bank. The main contributors to the World Bank report were J. S. Birks, and R. M. Durstine who received valuable assistance from B.B. Krishna, J.A. Socknat, A.R. Taha, S. Archondo, M. Fowler, M. Pemmarazu and D. McGinnis. Thanks are due to Mr. J. A. Rimmer for commenting on a draft. Secretarial assistance provided by Messrs. Naik Mohammad and Don Nihal Kuruppu is gratefully acknowledged.

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Authors' Note

A brief document dealing with such a large facet of development planning obviously leaves open questions, and raises issues, rather than providing solutions. It does, however, serve the purpose of informing policy-makers and commentators in a general way. It should also stimulate debate over some of the less obvious consequences of economic development. The members of the Manpower Planning Unit are happy to provide further details about the projections to Government Officials, and to discuss any question raised by the report.

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MANPOWER AND DEVELOPMENT IN THE SULTANATE OF OMAN.

1. Development Planning in Oman

Modern economic development in Oman began in 1970, following the accession of the present Sultan, Qaboos bin Said. Modernization and development was facilitated by oil revenues, and coordinated by a Development Council. The First Five Year Development Plan (FFYDP) represented a development strategy, aiming at diversification of the economy through : (1) development of new sources of national income to complement and ultimately replace oil revenues; (2) increasing investment in revenue earning projects; (3) development of infrastructure and national manpower resources; and (4) improvement of the civil service.

The Second Five Year Development Plan (SFYDP), issued in 1980, aims primarily to diversify the economic base through increased investments in the productive sectors, while expanding further infrastructure and public services. The private sector is to be assisted to promote production in agriculture, fisheries, industry, mining and traditional handicrafts. The SFYDP sets the following broad financial objectives : (1) to preserve the sound and stable financial position of the country; (2) to control inflation; and (3) to establish a general reserve fund. In addition, for the first time, " a reasonable size of the labour force" is mentioned as a possible limiting factor to economic growth.

As a result of concern at the labour market implications of rapid economic growth, the Omani Government requested the World Bank to assist in the development of a Manpower Planning Unit in the Directorate General of Vocational Training in the Ministry of Social Affairs and Labour.

2. An Initial Labour Market Forecast

The World Bank, through the new Manpower Planning Unit, has evaluated the workforce implications of the SFYDP. This labour market assessment was to :

a) show the labour force and population implications of the investment programme embodied in the SFYDP; and

b) to raise important labour, economic,educational and general planning issues which derive from this assessment.

The purpose of this Manpower Report is to give some indication of the results of this assessment of the SFYDP, in a brief and non-technical manner, and to highlight some of the main issues for consideration amongst planners and commentators in the Sultanate.

3. The Structure of the Analysis

The manpower assessment has been an ambitious technical undertaking. The available information has been used to the fullest. Reasonable assumptions have been introduced where the information has not been directly available. The principal method of analysis has been a computer model which converts detailed information regarding economic factors, education system performance, and labour force characteristics into projections of future conditions regarding manpower supply and demand.

The detailed results which arise must be evaluated with care. The projections must therefore not be interpreted in terms of their precise detail, but rather as indications of trends and order of magnitude. As such they provide a reliable indication of the nature of and change in the work force resulting from the Government's expenditures under the Second Five Year Development Plan. The results certainly serve well to illustrate the broad policy issues which Omani planners will have to face as development proceeds.

The development plan is best thought of, for this analysis, as government expenditure which results in requirements for goods and labour, and thereby brings about economic growth. Here we are concerned with the labour demand resulting from the massive government expenditures.

The nature of this analysis is as follows. The requirements for workers which results from economic growth are calculated. These calculations have been carried on to the year 1995. The labour requirements are worked out by economic sector (industry - agriculture, government, manufacturing, etc.) and occupational level (skilled, technician level, and professional, for example).

Separately, the supply of workers to the labour force is also calculated for each year upto 1995. The numbers of qualified workers among the new entrants to the workforce are calculated by reference to the growth of numbers of graduates from the Education and Training System (ETS) of the Sultanate (and by adding in the numbers who are receiving training abroad).

These annual supply and demand figures are then compared. The excess of requirements of workers in the economy over the supply of workers from the education system is presumed to represent the need for additional workers who may be imported into Oman.

One extra consideration is the population size of the Sultanate. Here, two estimates are considered, to give a range of results. As a larger figure, the estimate of 1.5 million total population is used. A figure of just under 1 million (total) population is used to be representative of the other end of the spectrum of estimates.

Curiously, the size of the population used does not have much impact upon the calculations of the number of non-nationals required during the duration of the Second Five Year Development Plan, (up to 1985-86). This is because the most important workforce entrants - those who are qualified - are produced by the Education and Training System, which (until full enrollment is attained) can be projected independently of the population size. As the projections move on towards 1995, the population figure figure becomes more important a consideration.

4. The Education and Training System and the Supply of Workers

The term ETS is used here to encompass the full range of education and training activities, from general schooling, specialized institutes and vocational training programmes, through the post-secondary education and the full range of on-the-job training and adult education schemes. The number and the qualifications of the individuals produced by the ETS ultimately depend on all aspects of its facilities, staff and programs.

Even though the growth of the Omani ETS has been impressive, it has not yet neared the capacity needed to satisfy the economic and social demands of Oman for education and training, especially at the post-primary levels. The concern with supplying qualified manpower suitable for the demands of the labour force comprises a large part of the present report.

In terms of the proportions of the relevant age groups in school, the estimates of population size do make a significant difference. Using the high total population estimate of 1.5 million, the corresponding 1980/81 primary level enrolment rate is about 40 percent.* The picture using the smaller population estimate (a total population of approaching one million), is as follows : The enrollment rate for males in 1980/81 is about 75 percent at primary level (based on enrollees in the 6-11 age group). The enrollment rate for girls has also reached an impressive level of some 40 percent, but is still lower than that for boys. At higher levels of schooling, there has also been substantial enrollment growth, though of course the numbers lag behind those in primary schools.

Thus, the level of coverage of the general schooling system has grown remarkably over the past decade, but continued growth of the ETS is essential to accommodate population increases, and to meet the needs for specialist and post-primary education. In terms of both capital outlay and recurrent expenditure, planners should not under-estimate the future considerable costs of the education system.

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*/ The enrolment rate is the proportion of children of school age who are actually in school, expressed as a percentage.

Even during rapid growth, the Omani ETS was characterized by high internal efficiency (in terms of the fraction of enrollees in each course sequence who complete that sequence). However, qualitative aspects of the ETS must also be attended to : the provision of suitable curricula, facilities, equipment, text books and instructional materials being dealt with, in a constructive fashion. Most crucially, the importance of teacher training to the development of education in Oman has been recognized and given high priority. These efforts aim to reduce the degree of dependence on foreign teachers in the Sultanate, but achieving a completely Omani teaching staff is extremely unlikely within the 15 year horizon of this report.

Primary school enrollments grow by 8 percent annually during the Plan period, general preparatory school enrollments by 10 percent annually and secondary level enrollments of all kind by 36 percent annually. Higher education show a correspondingly rapid annual increase of 23 percent in enrollees during the SFYDP. However school outputs - as entrants into the workforce - grow surprisingly slowly during the period of the SFYDP. Most students are held within the System as it expands.

5. Manpower Requirements under the Second Five Year Development Plan

The manpower requirements stem from the growth of the economy after consideration of the likely productivity gains to labour in each sector. In aggregate terms, under the most likely economic growth rates, (agreed with the Technical Secretariat of the Development Council in 1981) for the 1980 to 1985 period, the overall manpower requirements for the Omani economy are calculated to increase from 304,000 to 435,000, if the small (about one million) population figure is considered. If the 1.5 million population estimate is used, then manpower requirements rise from 459,000 in 1980 to 580,000*.

This increase in manpower requirements exceeds the growth of the national workforce of the Sultanate, which during the period of the SFYDP is likely to be about 3.0 percent annually. Even under projections based on lower rates of economic growth, the needs of the economy for additional workers far exceed the numbers that can be provided by the Omani ETS.

This shortfall is emphasised if the occupational composition of the increase in manpower requirements is considered. Over the Plan period, the occupational mix of manpower requirements biases upwards towards those with greater skill and qualification. As a result, despite the outputs of

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*/ The difference between the 304,000 and 459,000 workforce figures for 1980 is accounted for by different estimates of the number of rurally employed Omani nationals.

the ETS, the deficit between projected supply of and demand for professional and skilled manpwer increases. This is hardly surprising, in view of the fact that economic growth under the Second Five Year Development Plan generates a requirement of almost 10,000 university graduates.* Despite the past achievements of the Omani ETS, the challenge faced by education system planners remain great.

6. Comparison of Supply and Demand - Growing Non-National Employment.

During the Plan period, 1981-85, the annual rate of expansion of the Omani national workforce will be slow (at about 3.3 percent) because of the expansion of the ETS, which delays the entry of young Omanis into the workforce. After the Plan period, the number of nationals entering the workforce will increase significantly, as ETS outputs grow.

In the case of the most costly (in both money and time) occupational level, that of technically qualified professional manpower, the demand increases over the Plan period by about 700 each year. The supply of Omanis of this level increases by only 100 annually, despite the efforts mounted to redress the shortages of national manpower at this occupational level. The shortfall of technically qualified professional manpower rises from 4,800 to 8,100 between 1980 and 1985.

For the Plan to be implemented, this and similar deficits must be made up by imports of non-national workers.

The reliance upon non-nationals increases at all occupational levels, between 1980 and 1985, except in the case of semi-skilled office workers. Of particular significance is the increasing dependence upon non-national workers in technician, skilled and semi-skilled manual occupations. Only 19.3 percent of skilled manual workers may be Omani by 1985.

Overall, the Omani share of the workforce, which was 53 percent in 1980, is projected to fall to 45 percent by 1985, if the small population figure is considered. If the 1.5 million population figure is considered, the Omani share of 68 percent in 1980 declines to 63 percent in 1985.

It is important to consider in which part of the economy the non-nationals work. If agriculture is excluded from the assessment (leaving

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*/ This number includes graduates in technology, arts and sciences, and others with equivalent qualifications. The answer to the problem of producing graduates is not simply the building of the University, for the problem then becomes one of ensuring sufficient secondary graduates of good quality to provide students for the University.

the modern sector only), the pattern looks very different. In 1980, Omani nationals accounted for only 30 percent of employment in the modern sector. This proportion falls slightly during the Plan period; reliance upon non-nationals in the modern sector is pervasive and continuing.

The disposition of Omanis within the modern sector also gives cause for concern. Omani nationals are increasingly employed in sectors which they consider desirable. These preferred sectors are public administration, banking and finance, services, and wholesale and retail trade. The result of these preference patterns among new labour market entrants is that numbers of Omanis working in manufacturing and construction decline between 1980 and 1985. By 1985, only 9 percent of the workforce in manufacturing is likely to be Omani. This is significant because manufacturing is the sector upon which the future of the Sultanate's economic diversification depends. Omani planners therefore have a special interest in the success of this sector and more so the Omani participation in it. There are, in fact some reasons for optimism in respect of manufacturing. Scholarship department figures show that the engineering field is a very popular one with Omanis who are going abroad to study. These future graduates will provide a valuable and growing resource for the future of Omani manufacturing, provided they take employment closely related to their specialisation.

7. Longer Term Non-National Employment (1986-1995)

The planners must realize that the manpower implications of the successful economic implementation of the SFYDP will remain with the Omani society and economic for a considerable number of years after the Plan period. A decision to implement the SFYDP fully will result in a stock of some 238,000 non-nationals workers in Oman by 1985. These non-nationals will amount to about 55 percent of the total workforce of the Sultanate.

These 238,000 non-national workers will also, in 1985, be accompanied with a number of their dependents who will have moved to the Sultanate. A conservative estimate of the total number of non-nationals living in the Oman in 1985 is 285,000. The number of non-nationals could easily exceed 300,000.

Under the most likely post-SFYDP economic growth rates, Oman will remain a net importer of non-national labour until after 1995, when the number of non-national workers in Oman will approach 440,000, (small population figure). Imports are only slightly reduced if calculations are based upon the large population figure of 1.5 million.

Oman's reliance upon non-nationals must not be considered short-term and temporary. To do so is to invite unrealistic planning, which would exacerbate the very problems which Omanis least want to become deep-rooted.

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8. Some Major Issues

On the basis of the analysis carried out for this report, a number of issues related to economic growthand manpower development have been identified. This first manpower Report stresses the issues which pertain to the labour market, and its relationships with economic growth. Future reports will deal with significant issues in Education and Training, and other aspects of human resource development problems in the Sultanate. The general issues arising from this paper are listed below :

The Rate of Economic Growth. The future numbers of non-national workers depend principally upon the rate of economic growth and, to a slightly lesser extent, upon productivity gains within the economy. There is a direct connection between the rate at which the economy grows and the number of non-national workers imported. One of the chief aims of the proposed Manpower Planning Unit within the Ministry of Social Affairs and Labour is to demonstrate the manpower implications of various strategies and rates of economic growth : the faster the rate of growth, the larger the number of non-nationals who will be imported into the Sultanate.

Expansion of the ETS. The most critical problem facing development of the ETS in Oman is the provision and retention of a cadre of qualified teachers to meet the needs of the rapidly growing system over the coming years. By 1985, using the 1980/81 figure of one teacher for 25 students, the required primary school teaching force (exclusive of supervisors, headmasters, and other professional support personnel) will approach 5,000. This compares wiht some 300 presently employed Omani primary school teachers plus about 1,050 expected to graduate by the end of the Plan period. At the preparatory and secondary levels, the situation is also severe. The teacher requirements there are forecast as 1,400 and 500 respectively in 1985/86, but only small numbers of Omanis will be trained to teach at these levels before 1985.

The Dimension of Social Demand. This report presumes that the ETS will function to fill the need for trained Omanis for employment in the workforce. But individual wishes often do not correspond in kind or in number to those needs. Many students prefer to pursue arts courses, rather than take scientific or technical courses. If these choices are allowed to shape the ETS, then graduates will be less well suited to the needs of the workforce, and even more non-nationals will be required than has been projected here.

The Role of Vocational Training. Care should be taken to ensure that such training be appropriate in its content, at the most suitable educational level, that it not be perceived as " second class education " (this can be avoided partly by providing advanced vocational training

options), and that its outputs be directed to and accepted by appropriate areas of the workforce. The teaching of English is an important issue here, as it is in the ETS as a whole.

The Cost of the ETS. The rapidly growing capital and current expenditures will constitute a considerable financial burden in the future. However, investment in human capital is one of the highest priorities for the Sultanate. Investment expenditure on human resources development is one of the surest ways of facilitating economic development whilst minimizing social costs and not conflicting with the long-term social aims of the country.

Omanis in the Labour Market. Omanis are markedly under-represented in their own modern sector, the workforce of which is 70 percent non-national. The continued presence of a large share of the Omani national workforce in an inefficient agricultural sector raises questions of income distribution, economic and labour market dualism, and optimum utilization of indigenous resources. Yet, rapid further movement of manpower out of the rural sector might prejudice adversely the chances of the sector's success under the SFYDP investment programme. The development of agriculture is a national priority. Therefore, care must be taken to ensure that labour market and economic planning are not mutually contradictory.

Employment Preferences and Disposition of Omani National Workers. Omanis of intermediate and lower skill levels are showing an increased tendency to seek regular employment in office occupations, especially within certain sectors perceived as " desirable " by labour market entrants. This leaves other sectors - especially manufacturing and construction - heavily dependent upon non-nationals. The tendency of Omani nationals at intermediate skills levels to move out of the private sector as a whole is being accentuated by public sector salary policy. There is also a tendency for private sector employers to favour non-nationals, so making private sector employment even less attractive to the majority of Omanis. Thus, for Omani nationals, modern sector employment is tending to cluster in the public sector and, to a lesser extent, in some of the " more desirable " sector-occupation cells of the private sector. Such trends are of concern because they lead to domination of some crucial sectors by non-nationals.

Non-Nationals in the Labour Force. Although the number of non-nationals imported depends primarily upon the achieved rate of economic growth, other factors are significant, most notably : productivity of labour (nationals and non-nationals); the disposition of national workers throughout the workforce: the upgrading of the skill blend of Omani nationals and the non-national workforce; and the extent and nature of participation of women in the workforce. All these should become part of everyday economic and labour market planning in the Sultanate.

Omani International Labour Emigration. Omani national workers remain in employment outside the Sultanate. These workers might be encouraged further to take a more active role in the domestic development of Oman, as they have skills and modern sector experience. To a certain extent, these expatriate Omani workers, if employed within the Sultanate, could displace a number of non-national workers.

The Nature of the Non-National Workforce. International competition for labour in the Arab region means that the optimal skill blend of non-national workers for the Omani economy might not be available. This makes the monitoring of productivity even more important. Planners must watch with care to ensure that Oman's domestic development not be prejudiced negatively by shortage of skills on the international labour market.

Non-National Populations in the Sultanate. Non-national workers frequently wish to take dependents to their country of employment. The non-national workers living in the Sultanate have, as yet, brought few, because of their high turnover and the strict regulations on immigration. In 1980, nearly 144,000 non-national workers were accompanied by about 26,000 dependents in Oman. This is an unusually low ratio of dependents to economically active workers. In all other labour importing countries in the region, there is a higher ratio of dependents to each non-national worker. In Oman by 1985, if the ratio of dependents to workers remains the same, then there will be a non-national community totalling 285,000. This, however, must be considered a conservative estimate, because there will be increased pressures from non-nationals to bring their dependents into the Sultanate. Though there is no reasonable doubt that the non-national workers will continue to make a substantial net contribution to the economy, a probable total community of 300,000 or more non-nationals will have considerable impact on the Sultanate both in terms of the economic cost of infrastructural requirements and, more importantly, in terms of their social and political influence. Remittances to the non-nationals' countries of origin represent another obvious cost to the Omani economy of employing non-national labour. But remittances have little social or political effect, and so are one of the least significant costs under present circumstances.

9. Conclusion

The issues pertaining to the labour market are deeply interlocked and are also closely linked to other facets of economic development. Care, subtlety, extra information, flexibility and determined action are all needed to ensure that economic growth, the labour market and the associated non-national population are together directed towards the long term

interests of the Sultanate. The immediate desire for rapid economic growth should not be allowed to obscure the fact that the impact of policy and decisions made today (which affect the number and types of non-nationals) will still be significant in 20 years time. The dependence upon non-national workers is long-term, as is clearly shown by the projections in this manpower assessment. To suggest that the problem is short-term is not realistic and invites damaging policy decisions. The benefits of rapid economic growth over the next few years, should not be allowed to overshadow the long-term results of importing large amounts of labour during the Second Five Year Development Plan period. The economic planners of Oman will need to develop alternative growth scenarios and examine the manpower implications of each, in order to choose that which is perceived as providing the best compromise between an acceptable pace of economic growth and a rate of increase of the non-national workforce that is not so rapid as to be deleterious to the wider aims of Omani development.

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SOCIAL AND INSTITUTIONAL ASPECTS OF OMAN: A REVIEW OF THE LITERATURE

by

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Submitted to AID/NE/TECH/SARD

pursuant to Work Order No. 01
Contract No. PDC-1406-I-01-1091-00

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20053

The analyses and opinions expressed herein are those of the Institute for Development Anthropology and do not necessarily represent the positions of the Agency for International Development or of the Omani-American Joint Commission for Economic and Technical Cooperation.

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PREFACE

This review of the English and Arabic literature on social and institutional aspects of Oman was prepared as a background document for an anticipated field-based Socio-Institutional Profile of the Sultanate of Oman. The authors examined the available literature dealing with basic socio-cultural and socio-economic information; fisheries; water use, water rights and water users' associations; agriculture, land tenure, and livestock management; education and training; public health; women; public administration; and urban and rural development. A draft version was submitted to NE/TECH/SARD for comment in March 1982; this final version incorporates comments received from AID/W and from the field.

The authors wish to acknowledge the kind assistance received from Pamela Johnson, John Van Dusen Lewis, and Richard Burns, AID/W; Stacey Birks, IBRD/Oman; Dale Eickelman, New York University; and John Bannigan, Tetratech. They are, of course, in no way responsible for any errors of fact or interpretation that may remain in the text.

INTRODUCTION: THE GEOGRAPHY OF OMAN

The Sultanate of Oman (formerly the Sultanate of Muscat and Oman) is the largest political entity in south-east Arabia. The establishment of internationally recognized boundaries between the Sultanate and its neighbors: the United Arab Emirates (formerly Trucial Oman, today an alliance of the shaykhdoms of Abu Dhabi, Dubai, Sharjah, Ajman, Um el Qaiwain, Ras al Khaimah and Fujairah), Saudi Arabia and the People's Democratic Republic of Yemen (PDRY), took place within the last half century. The need to establish these boundaries was prompted by the discovery of valuable natural resources. Disputes arose over conflicting claims and triggered the Buraimi Oasis crisis, an issue which eventually bore British involvement. Not all of the boundary questions have been formally resolved and Oman's western boundary with Saudi Arabia remains problematic. The Musandam Peninsula in northernmost Oman is physically detached from the rest of the nation by territories belonging to Fujairah and Ras al Khaimah. Only recently the Omani government has completed a road which links Musandam with Muscat and the rest of the nation.

Historically Oman has been important in shipping and trade because of its strategic position. The Musandam Peninsula projects sharply into the Strait of Hormuz bringing Oman close to the Iranian port of Bandar Abbas. Control of the Strait of Hormuz and the Arabian Gulf (also referred to as the Persian Gulf) as well as the Gulf of Oman has in the past been occasionally claimed by Oman. The topography of Oman also encouraged the development of a coastal maritime power as the mountains of northern Oman isolated the coastal peoples from the Interior pastoral camps and oasis villages. The sea provided the only trade outlet for the coastal peoples. The Batina Coast affords a few good port

locations and enough cultivable land for the coastal population to raise crops. The coastal Omanis therefore became a wealthy and self-sufficient people supported by their domestic economy and trading network which extended throughout the Indian ocean region.

1. Geographic Overview. Regarding human settlement patterns and population distribution, Oman consists of two regions, northern Oman and the southern province of Dhofar. The two are separated by a broad belt of sparsely occupied desert.[1] Northern Oman consists of several distinct geographic zones: The Musandam Peninsula, the Batina Coast, the Hajar Mountains (including Jebel al-Akhdar), the Bajada and the Badiya.

The northern Musandam Peninsula is a mountainous limestone massif of rugged high peaks cut by isthmuses and narrow straits. Only the Shihuh tribe of mountain dwellers and fishermen inhabit this region. These people, of mixed Arab and Iranian origins, are mostly subsistence herdsmen and cultivators, many of whom seasonally move down from the mountains to the coastal settlements and engage in fishing (Dostal 1972 and Falcon 1973:3).

Northern Oman, south and east of the United Arab Emirates, encompasses the other four zones. The Batina, along the coastal bay of the Gulf of Oman, is a narrow plain which sweeps in an arc from Oman's northern border with Fujairah southward to Matrah and Muscat. The Batina is 280 kilometers long and its width ranges 20-30 kilometers, although at either end of this crescent-shaped shoreline the mountains close in upon the plain and drop abruptly to the

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[1] For a detailed discussion of the ecological zones of Oman see Cordes and Scholz (1980). They distinguish thirteen natural and cultural areas and provide short descriptions of each, emphasizing the role of nomadic pastoralists in these environments (Ibid:3-6).

sea. The availability of fresh fish and shallow water with which to irrigate date palms enables the Batina to support its population.

Despite limited natural port facilities, the Batina offers secure resources for settlement and good potential for trade. The development of trade along the north coast of Oman was aided by its location between the Mediterranean Sea, to the west, and the Indian Ocean and China sea to the east. As trade flowed through the Arabian Gulf, dynasties of Omani rulers levied customes taxes on goods passing through the narrow strait. Traders were attracted to Oman's coast because the Indian Ocean's southwest monsoon which produces a sailing pattern favorable to the ports of Oman's eastern seaboard. Consequently these ports became major centers of commerce. Sohar, Qalhat and Muscat have all served as a principal port of call for Indian Ocean trade at one time or another.

The population of the Batina, approximately one-third of Oman's total, subsisted largely upon agriculture, supplemented by fishing, until recently when new job opportunities arose. Few of the scattered villages along the plain ever grew to become urban centers and to this day the coast is largely a rural area. A dual economy developed along the littoral as the subsistence level farmers carried out their agricultural activities making little contact with the international merchant class. The latter group grew to control the profits from maritime trade as well as the marketing of local produce.

The Hajar Mountains form the heartland of northern Oman. The western Hajar (Hajar al-Gharbi) traverses the coast from the United Arab Emirates to Muscat. The eastern Hajar (Hajar al-Sharqiya) crowds the shore from Muscat to Sur. The Suma'il Gap divides the mountain belt and connects Interior Oman with the coastal port of Sib, providing only a difficult avenue of access and

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communication between the maritime coast and agricultural/pastoral Interior. This range has been a formidable barrier in both recent and ancient history, and in part explains the very different ethnic and political characteristics of the coast and the Interior.

The widest portion of the Hajar range is the Jebel al-Akhdar (green mountain), notable for its high mountains and extensive foothill zone. In places this massif reaches a height of 10,000 feet. Its broad plateau, at 6,500 feet, is suitable for agriculture and supports a number of villages. Despite its rocky appearance, the Jebel al-Akhdar is one of the most fertile regions of Oman. Fruits not found elsewhere in the country are cultivated there, among them apples, peaches, walnuts and pomegranates.

Movement across the Hajar range is limited to a few passes which are formed by the drainage pattern. Only three routes are reasonably negotiable for transportation: (1) the Wadi al-Jizzi which connects the Buraimi Oasis area with the port city of Sohar; (2) the Wadi al-Kabir and Wadi al-Hawsina system which links the interior district around Ibri with its principal port at Khabura; and (3) the Suma'il Gap which provides the most extensive linkages since, in addition to granting access to the Capital Area from Central Oman[2]-Jawf area, it facilitates communications between the regions of Sharqiya (south interior Oman) and Jabir (the foothills of the east face of the Hajar al-Sharqiya which border the Batina Coast).

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[2] Inner (or interior) Oman is often divided into "Northern" Oman (not to be confused with the term in the broader sense) and "Central" Oman. "Central" Oman or Jawf is the term used by Wilkinson and others to refer to the region of Oman proper, the area of the Imamate of Oman around Nizwa. The term "Northern" Oman refers to the interior region north of Nizwa, around Ibri, or the Dhahira. It has been less strongly Ibadhi and has a significant Sunni population.

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The Jebel Akhdar and the Hajar range support numerous small village settlements. Where water for irrigation can be directed to a location and there is enough land for cultivation, farmers plant date palms and whatever winter wheat and vegetables space allows. Livestock is suited to the rugged terrain and mountain pastoralists (shawawi) have practiced semi-transhumant animal husbandry in this region until recently. These pastoralists have tended palms as well, as a way of diversifying subsistence strategies in this drought prone region.

Bajada, the third zone of northern Oman on the western side of the mountains, is the piedmont zone. This region extends from the foot of the mountains westward, approximately 25 kilometers into the desert foreland or Badiya zone. The regional names for districts within the Bajada are (from northwest to southeast): the Dhahira; Oman (or Jawf); the Sharqiya; and Ja'alan. The majority of Bajada villages are located in the larger mountain valleys and along the inner edge of the Bajada zone. In these places water run-off is concentrated sufficiently to provide a consistent flow of fresh water for year-round cultivation and underground aquifers may be tapped. The settlements which form here are oases supported by date palm cultivation and to a lesser extent, wheat and vegetable cultivation, livestock raising, crafts and trade. The rest of the Bajada is incapable of supporting village life although grazing is possible and in the Dhahira, lowland or Bajada shawawi populations once herded sheep and goats. Although the Bajada supports the largest settlements in Interior Oman none of these exceeds 8,000 in population due to limited water supplies.

The Sharqiya is a transitional zone bordering on the Wahiba Sands. The proximity of the Sharqiya settlements to this sandy, barren desert land has not

been without its effects. Today some settlements of the Sharqiya have such an abundance of water that much of it is wasted. This is ironic as it was the droughts of the 19th century in this area that encouraged many residents of the Sharqiya to migrate to East Africa and take up trading and commercial livelihoods. As a transition zone the Sharqiya is marginal and cannot continuously support an agricultural population. Even with falaj irrigation engineering techniques, agriculture is not dependable. Shifting sands and encroaching dunes have at times forced villagers to abandon their settlements (Arabian American Oil Company 1952:95).

The Bajada fades westward into the desert fringe and ultimately meets the Badiya or true desert. The Badiya is inhabited only by nomadic bedu (bedouin), notably of the Duru, Janaba, and al-Wahila tribes. The environment is too harsh for sheep and goat herding so, prior to the advent of motor vehicles, camels provided the transportation and subsistence needs of the bedu. To the southeast of the Sharqiya the Wahiba Sands are Bayida lands populated only by the bedu of the al-Wahiba tribe. Further west, bordering the Bajada regions of Dhahira and Jawf, are the fringes of the Rub al-Khali (the Empty Quarter). Here a few bedu of the 'Awamir, Manasir, Duru and other smaller tribes reside. These tribes travel to the oasis settlements of the Bajada to trade and find summer pasture.

From the coastal city of Sur at the southern tip of the Hajar Mountains to the northern border of the province of Dhofar, the land is barren and uninhabited. Dhofar province itself is mostly Badiya land separated from the lush coastal Salalah Plain by the Jebel Qara Mountains. This coastal plain benefits from the monsoon climate. Lush vegetation extends up to 10 miles inland and qanat irrigated gardens produce coconuts and other fruits. But in

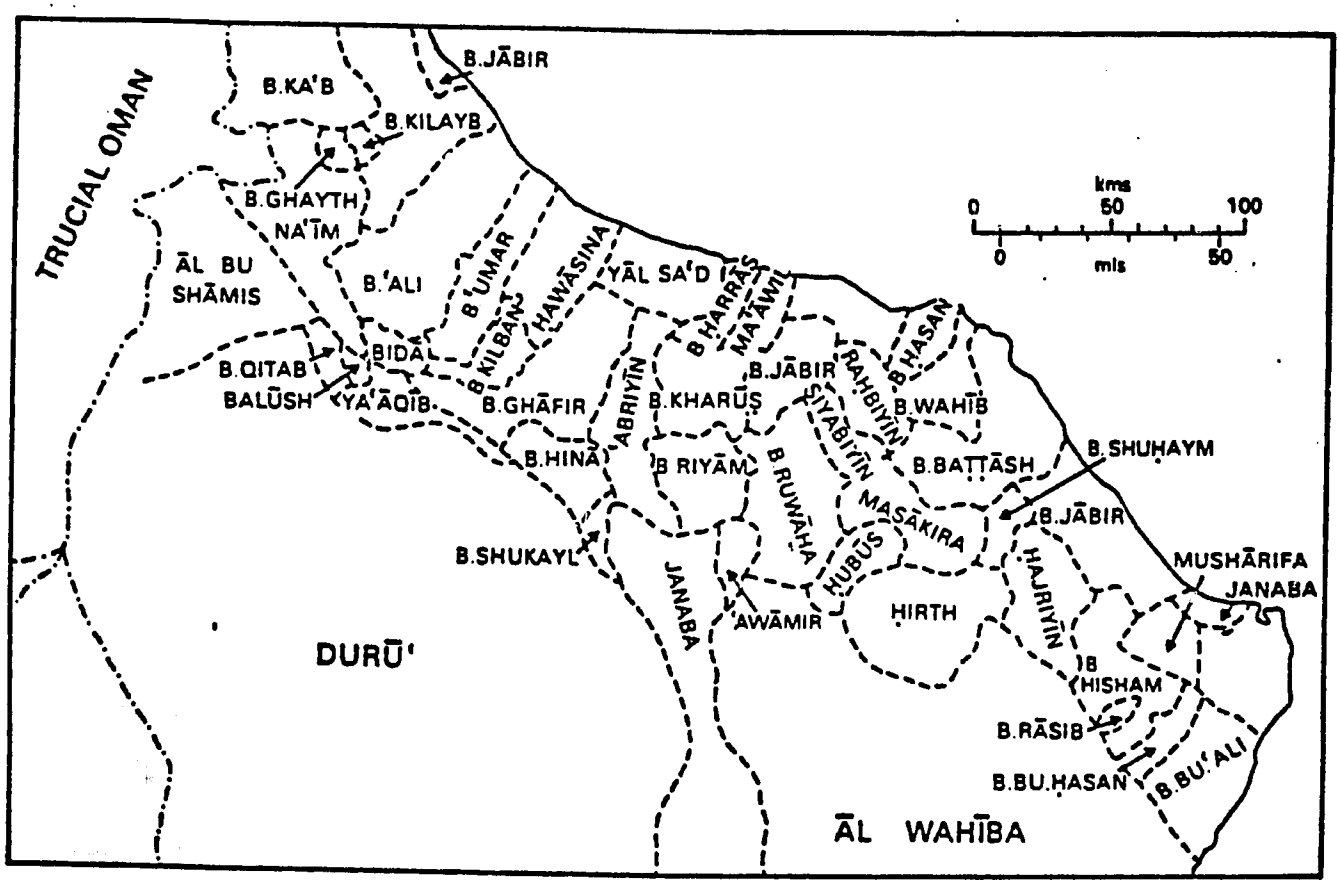
this area the falaj systems only supplement the rainfall provided by the south-west monsoons, they are not the principal water supplies. The population of Dhofar is greatest on the Salalah Plain, and it is particularly concentrated at the settlements of Salalah, Mirbat, Raysut and Taqah.

The bordering mountain zone consists of Jebel Samhan to the east, Jebel Qara in the center and Jebel Qamar in the west. Vegetation and rainfall are found only in the lower reaches of the mountain region. The mountain inhabitants are nomadic pastoralists including the al-Kathir and al-Qara herdsmen. These peoples, as is the case for most native Dhofaris, are ethnically distinct from the Arab tribesmen. They were not assimilated by the Arabs and they speak a non-Arabic language (Sweet 1971:225). There is little human activity in the higher elevations of the Jebel Qara or in the desert to the west.

The majority of Dhofaris engage in subsistence level production: pastoralism (cattle and goats), agriculture, fishing or trade. While the tribal confederations of the al-Qara and the al-Kathir perpetuate a strong tribal social organization in Dhofar, the coastal settlements are characterized by a mixture of peoples. In addition to the native Arabian stock, there is a large representation of peoples with origins among eastern Arabian tribes or in Africa, Ethiopia and India. These peoples have a long history of commerce as Salalah was the major port of export of frankincense. This scarce commodity was unique to Dhofar and control of this trade periodically fell under the auspices of Muscat's ruling elite. Nonetheless the frankincense trade benefitted the traders and not the average peasants and herdsmen who continue to be among the poorest in Oman.

The distribution of tribal populations of northern Oman is illustrated in Figure 1. Many of these tribes have both sedentary and nomadic members. The Bajada and desert zones of inner Oman are still organized along tribal principles. All of the tribes belong to one of two moieties: the Hinnawi or the Ghafiri. These two confederations originated in the 18th century and encompassed the entire population of inner Oman, both settled and nomadic. Shifting of alliances between these divisions is common. The leaders of these confederations allied with the Imams and ruled the Interior.

FIGURE 1



The main tribal groupings of the Sultanate (after a map prepared for the Government by Petroleum Development (Oman) Ltd. c. 1962.

From: Wilkinson, J.C., 1977 Water and Tribal Settlement in South-East Arabia.

Other cross cutting sets of loyalties exist in Oman in addition to those associated with confederations. Central Oman, the seat of the Imamate government (deposed in 1955) is strongly Ibadhi while Northern Oman (the Dhahira) has a substantial Sunni population, including a Baluch tribe which was formed by Baluchi immigrants who moved from the Batina to the Interior. There is also some vestigal trace of the 'Adnani-Yamani division which originally may have denoted separate racial identities. Purportedly the Yamani peoples settled Oman first, followed by the 'Adnani peoples who moved down from north and central Arabia. Generally the Yamani are identified with the Hinnawi confederation and the 'Adnani with the Ghafiri, but this is not always the case.

IRRIGATION AND WATER MANAGEMENT SYSTEMS

The settlement patterns of both the Batina Coast and the interior northern portion of Oman, from the west face of the Jebel Akhdar to the Badiya desert and south to the Sharqiya are a function of the distribution of water which is obtained directly from wells and/or transported underground through complex and delicate irrigation systems, aflaj (singular falaj).

1. Diachronic and Causal Explanations of Omani Irrigation. The purpose of this section is to describe the research which has been done on irrigation communities and the theoretical perspectives of the researchers. Several studies of irrigation systems have been undertaken (Barth 1978; Birks and Letts 1977; Wilkinson 1974a, 1977, 1978, 1980) primarily from the perspective of the relationship between water management and social structure of oasis communities. In each of these publications, all of which were the result of field work undertaken by the authors, irrigation in Omani oasis settlements is discussed as the focal point not only of community subsistence but social structure as well. All of the writers take a historical view which is particularly explicit in Wilkinson's work and the present village systems are discussed from the perspective of past social development of irrigation communities (Wilkinson 1977, 1978, and to a lesser degree Barth 1978 and Wilkinson 1980) and with a critical evaluation of the implications of the present condition of these communities on their future survival as functioning social units (Birks and Letts 1977; Wilkinson 1978, 1980; and a few comments by Barth 1978).

This strongly diachronic interpretation is most fully presented and documented in John C. Wilkinson's book Water and Tribal Settlement in South-

East Arabia: A Study of the Aflaj of Oman (1977) which is, in part, based upon his unpublished dissertation research (1969). Wilkinson (1977) discusses in detail his theory of the Imamate cycle and its relationship to village settlement. In this framework he demonstrates the cyclical pattern of rising and collapsing irrigation communities throughout Omani history in conjunction with political and tribal factors whose influence upon these communities and their development extend far back in history, to both pre-Islamic tribal movements and to the impact of the Arab conquest of Oman in the 7th century A.D. with the spread of Islam.

In a series of works (1974a, 1978 and 1980), Wilkinson presents a generalized model for the functioning of Omani oases irrigation systems prior to the introduction of mechanized equipment. He correlates the nature and degree of efficiency of community water works with the overall socio-economic functioning of any particular community and with the nature of regional forces effecting the community. While demonstrating in detail the relationships among successful irrigation, community and region, he nevertheless does not deal with particular community institutions except those directly related to irrigation. His explanations for the rise and fall of hydraulic Omani society rely upon broad historical and tribal variables. It remains for us, however, to determine the specific relationship between successful irrigation systems and other local political and social and economic institutions.

Wilkinson's generalized model will be reviewed in greater detail below in order to portray what is often referred to in the literature as a 'traditional' irrigation system. This system has roots in antiquity and was widespread in Oman until the 1950-1980's labor migration movements began to draw Omani's first to the oil wealthy Gulf States and later to urban development

centers within Oman itself. Today irrigation systems remain in operation to a greater or lesser degree in various communities, some of which have not changed to mechanized alternative forms of water exploitation and others of which have collapsed from labor shortages and other factors. The model remains the fundamental principle behind much of the practices in use today and can explain the problems which many of these communities face. The generality of the model must be emphasized because there is a high level of variation between communities in various details pertaining to water allocation and ownership, market facilities, etc. Essentially, each Omani village has its own facility and distribution pattern. As these factors vary so may the loci of decision making within the community.

Volume II, Water, of the Research and Development Survey in Northern Oman, Final Report (1980), is a comprehensive study of water sources and their management and distribution in a sample survey area of Northern Oman which included a cross section of settlements in the Batina Coast, the Western Hajar Mountains and the interior Bajada around Ibri. The basis of this evaluation of irrigation in Northern Oman is presented in the form of a detailed hydrological analysis. The work also contains extensive information about the functioning of irrigation systems and provides recommendations concerning rural development of water management systems.

Changes in the traditional system have been noted by all of these researchers (Barth, Birks and Letts, Durham II, Wilkinson) who have directly observed changing oasis communities. The consensus among them points to modernization and its rapid pace as the catalyst of a host of variables including labor migration which have set the social structure into rapid transition. Wilkinson takes a regional view and points to: (1) the centra-

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lization of power along the coast under the present government and the demise of the religious institution of inner Oman; (2) the Imamate as setting the stage for modernization in the form of mechanization; and (3) changes in the market structure. As principal factors effecting the irrigation communities, he points to major shifts in patterns of trade, consumption and investment. In turn, oasis products have declined in demand as have nomad services and the gap between rich and poor in these communities is growing with investment shifting from community to individual ownership. With these changes, migration has been a major response which, together with economic factors, has led to the abandonment of community irrigation systems through negligence.

The Durham Report (II. 1978) takes a less negative view of the role of mechanization and single ownership of water sources in contemporary Omani irrigation practices. The authors of this study emphatically concluded with the following statements:

> The growth of wells in the field area has occurred without any substantial encouragement by development companies or government. Without any central organization or stimulus, local farmers have already spent about a quarter of a million Rials Omani in establishing well farming within the Durham field area outside the coastal strip and perhaps some 400,000 Rials Omani in total. It is therefore important to ensure that this form of investment is reasonably successful in the light of how it fits in with traditional water extraction, irrigation, and resulting social systems, as well as from a purely agricultural and economic point of view (p. 126).

Barth's briefly reported research (1978) concentrated upon an attempt to understand the complex economic-political structure of Bahla, a Bajada community west of Izki and Nizwa (oases which guard the Suma'il Gap). He studied this structure on the basis of the community relationships to and participation in the systems of land and water ownership and users rights. He emphasized the wide and ever growing dichotomy between rich and poor and,

in contrast to Wilkinson, who has stated that Omani oasis society is essentially unstratified (1974a:75), he describes features of social stratification along class lines differentiated by wealth.

Birks and Letts (1977) and Birks (1977) have studied oasis settlement from the perspective of labor migration and its impact on irrigation systems, social structure and village economies. Localized drought in the 19th century led many Omani village men to seek employment in East Africa. Later, from the 1950s to the present, the rapid growth of capital-rich states in the Gulf attracted Omani labor. The authors cite rapid socio-economic change as initiating changing attitudes towards agriculture. Emigration, both permanent and short-term, has increased creating critical labor shortages and at times forcing emigration of the remaining population which has been unable to raise the capital investments and labor force necessary for maintenance of the irrigation system.

Recommendations regarding rural development have been forwarded by Wilkinson in Problems of Oasis Development (1978) and elsewhere (1980). He considers broad as well as specific factors of change and attempts to deal with both the inevitability of such change and the preservation of the integrity of community social institutions in order to enable the community to retain equitable distribution of resources and self sufficiency. The Durham Report (II. 1978) submits two sets of recommendations. The first (p. 167-170) deals with specific technical suggestions, organizational improvement, falaj income (including limitation of the control of shaykhs and equitable rental systems), and outside aid to aflaj. "Development Recommendations Concerning the Falaj Settlements of Northern Oman" (p. 175-179) lists specific suggestions regarding

in the field and administrative organization of a "Falaj Settlement Development Unit" with reference to existing government agencies. Programs of investigation and staff organization are outlined (these recommendations are more fully discussed below). Birks and Letts (1977) concur that the present situation requires immediate attention and careful planning and that the future is pointing toward the wholesale abandonment of smaller villages and cooperative irrigation systems. Continuing development of wealthy individual-based investment for personal exploitation of water resources is leading to sharply increased social stratification (Barth 1978) and the growth of private farm estates to the exclusion of small landholders.

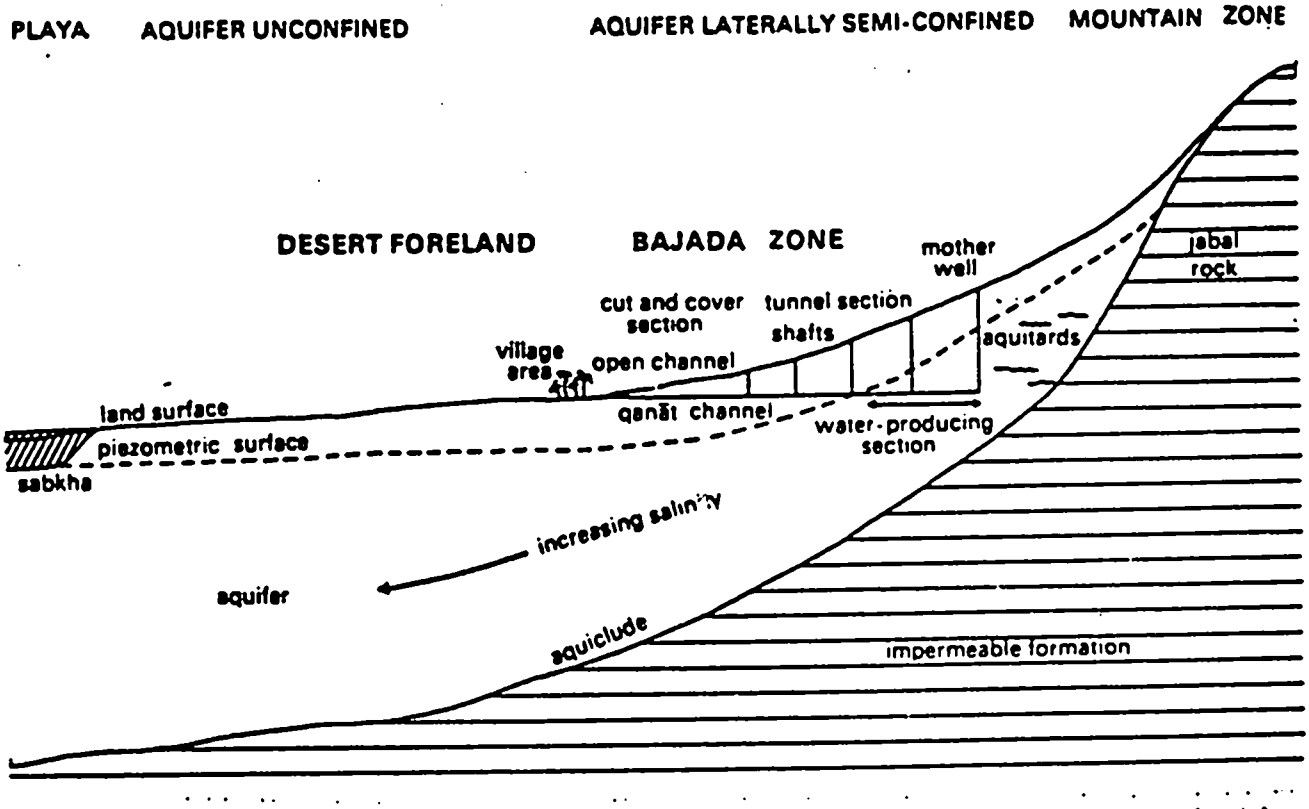
2. History of Irrigation in Oman. The oldest aflaj (Persian karez; Arabic qanat; Arabic-North Africa foggara)[3] in Oman is believed to date from the early period of Achaemenid rule in Persia, a kingdom which lasted from 550 to 331 B.C. (English 1968:175 and Wilkinson 1977:85). Present day Oman was not only directly within the sphere of this Persian empire but the inhabitants were largely Persian. It was not until the 2nd century A.D. that Arab tribes migrated into the region. These two groups, the Persian village cultivators and Arab mobile herders and traders, co-existed until the spread of Islam in the 7th century A.D. At that time the Arabs forced the Persian ruling and landlord classes out of Oman and effected a relatively peaceful transfer of power within the oasis settlements, a process which enabled the Arabs to inherit the Persian built aflaj systems intact. It appears that a

[3] Variations in the terminology: qanat, quanat, canant, connought, kanat, khanate, khad, kanayet, ghannat, karez, kariz, kahrez, karaz, kakoriz (Southwest Asia); foggara, mayon, iffeli, ngoula, khettare, khottara, rhettara (North Africa); falaj, aflaj, felledj (Arabia). Cressley 1958:27.

substantial proportion of the Persian cultivators remained in the settlements and continued to live with the new Arab ruling class.

Even the shortest falaj of a kilometer requires a tremendous investment in both labor and time in addition to the requirements of planning, expertise and management. The average mother well which taps the water sources is 20 meters in depth but wells in Iran are dug as deep as 125 meters (although in Oman the deepest recorded is 60 meters). In addition to a graded underground gallery, vertical shafts must be excavated to connect ground level with the channel at approximately 100 meter intervals (Figure 2). The Achaemenid and later residents of Oman who constructed the aflaj had access to technical expertise (mostly in the form of trained personnel, for specialized tools are

FIGURE 2: Qanat in cross section



From: Wilkinson, J.C., 1977, Water and Tribal Settlement in South-East Arabia.

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not necessary) and the resources to mobilize this trained labor as well as substantial capital for investment in the enterprise. It also appears that land was owned and managed in large tracts in a Persian form of fuedal economy. The Persians built many more aflaj than are in use today for without regular maintenance they quickly break down. There are probably 4,000 or more aflaj in Oman today, although many are inoperative (Birks: personal communication). The Arab settlers had no knowledge of falaj construction and do not build them today. Some cleaning of aflaj channels is done by local villagers. There is, however, today an itinerant class of falaj specialists, the 'Awamr tribesmen who clean and maintain the underground channels and can at times locate the mother well and construct additional channels which they link to this source. With the rapid changes which have taken place in Oman over the last few years it is uncertain as to whether the 'Awamr still perform these tasks (Birks: personal communication).

3. Geography of Irrigation - Distribution of Techniques. Different irrigation techniques used in Oman are in part regionally specific responses to the particular nature of the geography and available water sources.

a. Batina Coast. Drainage from the east face of the Jebel Akhdar mountains flows towards the ocean. At both the northern and southern tips of the crescent-shaped Batina coastal plain the mountains meet the ocean shore leaving little land for settlement. Port cities and other settlements including Muscat, Matrah, Qurayat and Qalhat have developed at the mouths of wadis crossing this narrow corridor. The primary agricultural settlement of the coast however is within the Batina plain (Wilkinson 1977:47). The economy of the Batina has traditionally been based on irrigation agriculture, fishing, and maritime trade.

Two distinct zones characterize cultivation practices. Close to the shore are settlements with unirrigated palm gardens. Because of the high water table the trees are able to tap water directly. The effects of this brackish water are apparent in yields of low grade date crops. Inland, up to three kilometers west of the littoral, tree crops depend upon irrigation from wells. In other parts of Oman wells fill a variety of subsidiary functions and supplement falaj irrigation but are not, except in some recent settlements, the primary form of water collection. Most of the Batina coast wells rely upon animal traction. These are cog-driven jazira wells (also known as manjur or zigra) in which a bucket is filled, raised and emptied into a channel (Figure 3). This jazira well together with its associated area of cultivation are jointly called tawi or dahiya. Hand-drawn wells are also in use but are less common.

The aflaj and the major investments necessary to operate them have generally not been necessary for irrigation along the Batina Coast. However, remnants of a few aflaj exist which once carried water from the mountains to the coast. Traces of cement along channels associated with jazira irrigation suggested, however, that they were once extensively coated indicating there had been a considerable agricultural investment in this region (Ibid:83). As a result of this system of irrigation operating through individual ownership of wells, Batina farmers have a long established pattern of land tenure based on individual well plots and water rights (Wilkinson 1978:27).

Recently the distribution of well irrigation has shifted toward increasing inland development along the eastern escarpment of the Hajar Mountains. With the introduction of the mechanized pump wealthier investors have sunk wells farther upstream into the hills. The effects of this appear in higher salinization rates and some down-stream water shortages within the aquifer. The Durham Report (II. 1978) has extensively documented the distribution of

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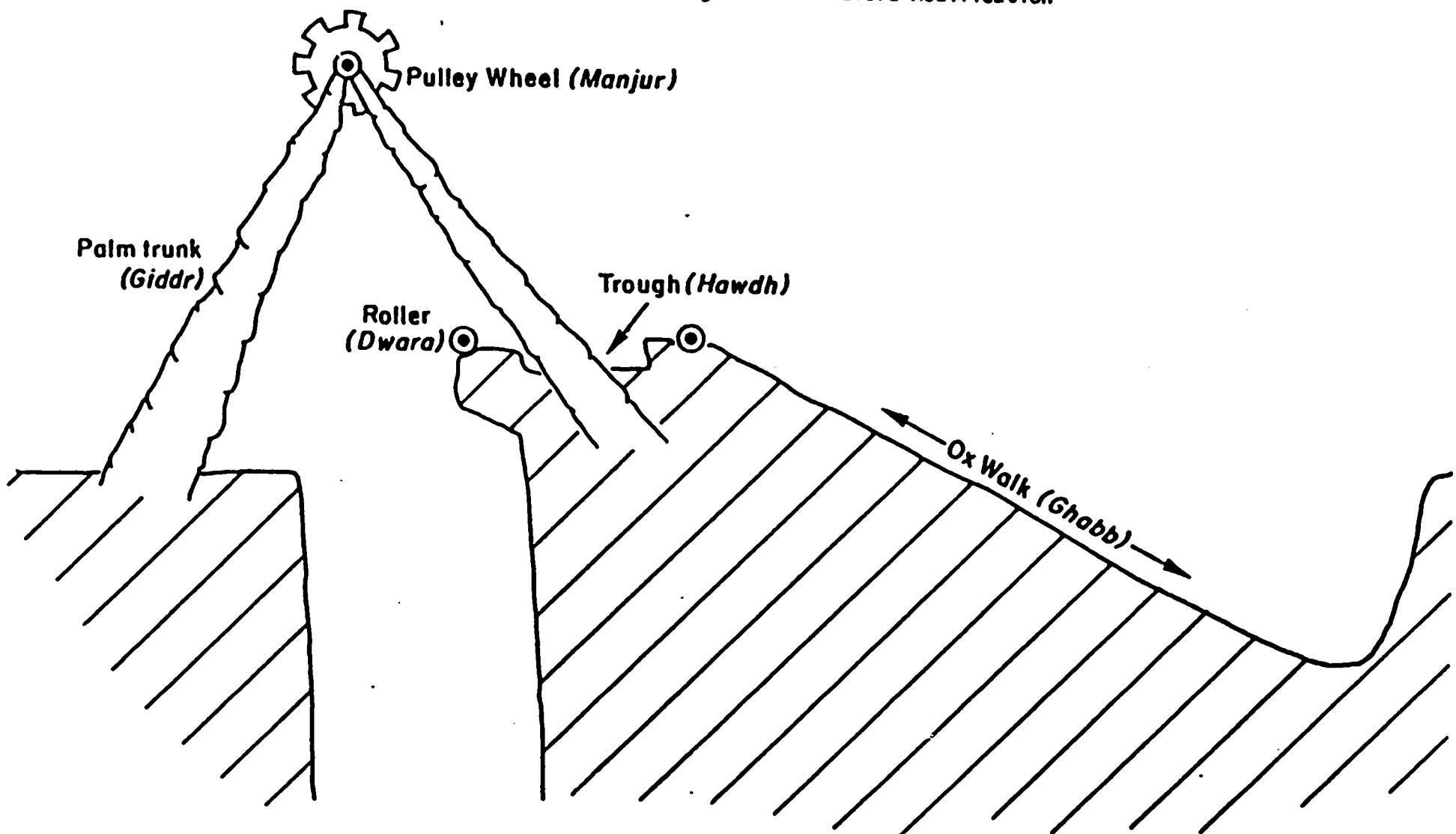
FIGURE 3: Cross-Section of 'Zagira' Well Before Modification



From: Research and Development Surveys in Northern Oman, Final Report 1978, Volume II, Water.
H. Bowen-Jones, Project Director.

mechanized pump wells along the coastal strip. The authors have noted that many of the pumps, all of which were set up within the last 20 years, are installed to pump water from the old jazira wells and thus their distribution is a function of previous settlement factors. The jazira wells which remain unconverted are now used only during occasional winters of low rainfall (on the coast the summer is the wet season) to irrigate water crops of wheat and vegetables while date palms are water by pump wells.

The Batina Coast irrigation procedure lacks the standardized routines which have characterized the Interior falaj irrigation systems. Water is more easily obtained and rigid distribution controls are not necessary. Furthermore, the widespread use of motorized pumps has led to a reduction in the demand for labor by approximately two-thirds. Agricultural production has also dropped. The Durham team has documented two reasons for this decline in productivity (Ibid:107-8). With the increase in leisure time some farmers have lost their incentives for work and have begun to neglect their fields. Others take on additional employment and spend less time tending their gardens. In the latter cases women sometimes carry out the daily irrigation duties while combining them with clothes washing or gardening as well.[4] But the authors suggest that women have a sufficient number of daily chores to keep them from being able to devote the amount of time to irrigation necessary to raise productivity.

b. Inner Oman.

i. Wells. Until recently wells were used in falaj communities for supplementary water supplies. These were excavated by individuals on their own land according to their own needs. Throughout the Bajada settlements of the

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[4] Women often inherit their own wells on the Batina Coast and palms in the Interior.

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Hajar Mountains range wells have been used to raise water to irrigated seasonal crops, water livestock and provide convenient domestic water. They have been particularly important in mountain valley settlements which are often too high to effectively use falaj water. Many wells have now been equiped with mechanical pumps, as along the Batina, hence an increase in the amount of water and rate of flow. These individually owned mechanized wells, when sited above or near aflaj, have eroded the base flow of the communal aflaj and competing for water previously shared among holders of water rights. Mechanization has alleviated the problems of labor shortage in many oasis communities but is indicative of a new trend in investment away from community management of resources and a growing focus on competitive maximization of short-term benefits.

Well pumps are usually purchased by returning migrant laborers (previously given free of charge by the Ministry of Agriculture, they are now subsidized and loaned by the Agricultural Bank). Occasionally two or three migrants will jointly invest in a pump well and share the profits, but usually these joint ventures are between relatives. Loans may be obtained for purchase of a pump and well construction. Typically date palms or a house is offerd as collateral for these interest-free mortgage loans, the lender then has to use of the house or date harvest until the loan is repaid (Durham Report II:1978:111). In reality interest is paid as the owner must continue to water the palms although he forfeits the harvest until the debt is repaid. Temporary ownership in this form may last several years. Shaykhs often own many wells or even a monopoly of wells. They usually rent them out in exchange for an agreed upon number of sacks of the harvest yield. Despite this growth of investment in wells in the Interior it is doubtful that they can ever replace falaj in practicality.

A falaj is more than a mechanical means of water exploitation; it is the visible engineering expression of a particular social and economic response by a community to specific environmental and resource opportunities and constraints. (Durham Report II, 1978:175).

(ii) Aflaj (singular falaj). The word aflaj is used in the Omani context to refer to a complete system of irrigation which may pertain to any organization for sharing water among those who have rights to it as well as the physical facility (Wilkinson 1977:74). Corporate distribution is implied in most usages of this term but it can be applied to more than one form of irrigation. The distinction between different forms of aflaj irrigation is not articulated in the Omani vocabulary, but J. C. Wilkinson has supplied useful terms for two common forms of falaj irrigation which are helpful in describing their individual characteristics (Wilkinson 1977:74).

(1) Ghayl Aflaj. Fresh water resources from surface flow are most frequently concentreated in the shallow gravels and conglomerates of the wadis which constitute the drainage network. The perennial flow in these wadi gravels is called ghayl. The ghayl falaj channels this flow into a conduit by means of an embankment (sibya or ma'qad) or through a collecting gallery. The amount of water diverted in this manner is limited however as Islamic law prohibits the complete blocking or diversion of a stream. The ghayl falaj often merely channels the water to gardens adjacent to the wadi bed, but where land is unsuitable for nearby cultivation the diversion channels may be cut into the wadi side some distance before reaching the gardens. Suitable land for cultivation however is often lacking despite water resources. The Bajada region shows the laborious planning and maintenance of gardens in outwash fans and extensive terracing of wadi banks appears on the Jebel Akhdar plateau and at Maqunlyat in an effort to utilize stream flow. Although this

flow has been the only supply of water for some small villages in mountain areas (such as a few in northern Oman) these are rare exceptions for nearly every sizable Omani village is heavily dependent upon its qanat.

(2) Qanat Aflaj. Qanats are and always have been the primary source of water for most Omani communities. Even those which today rely exclusively upon wells or ghayl aflaj once had operative qanats. The principle of qanat construction is the location of an underground water source and the construction of a subterranean gallery connecting this aquifer with an area where terrain is suitable for cultivation. Qanat construction is essentially a mining operating, one which the Achaemenid Persians perfected and it was probably under these rulers that the qanat spread through the Middle East.[5] The initial stage in planning for qanat construction was the detection of an underground aquifer into which the primary well shaft penetrated. This is called the 'mother well', a literal translation of the Arabic term 'umm ('mother'). Although qanat aflaj are no longer constructed in Oman, the repair specialists who maintain the qanat aflaj often seek to locate the mother well. The mother well is usually easily located. When this source is not obvious it is usually found through a process of divining, the same process used in searching for new aquifers to couple onto an existing qanat. The process of divining implies ritual methods but actually consists largely of detailed examination of vegetation and surface geology (Birks and Letts 1976). Decisions as to where along the aquifer to locate the mother well involve the weighing of the advantages of excavating a short shaft high upslope against the disadvantages of having a lower volume of water

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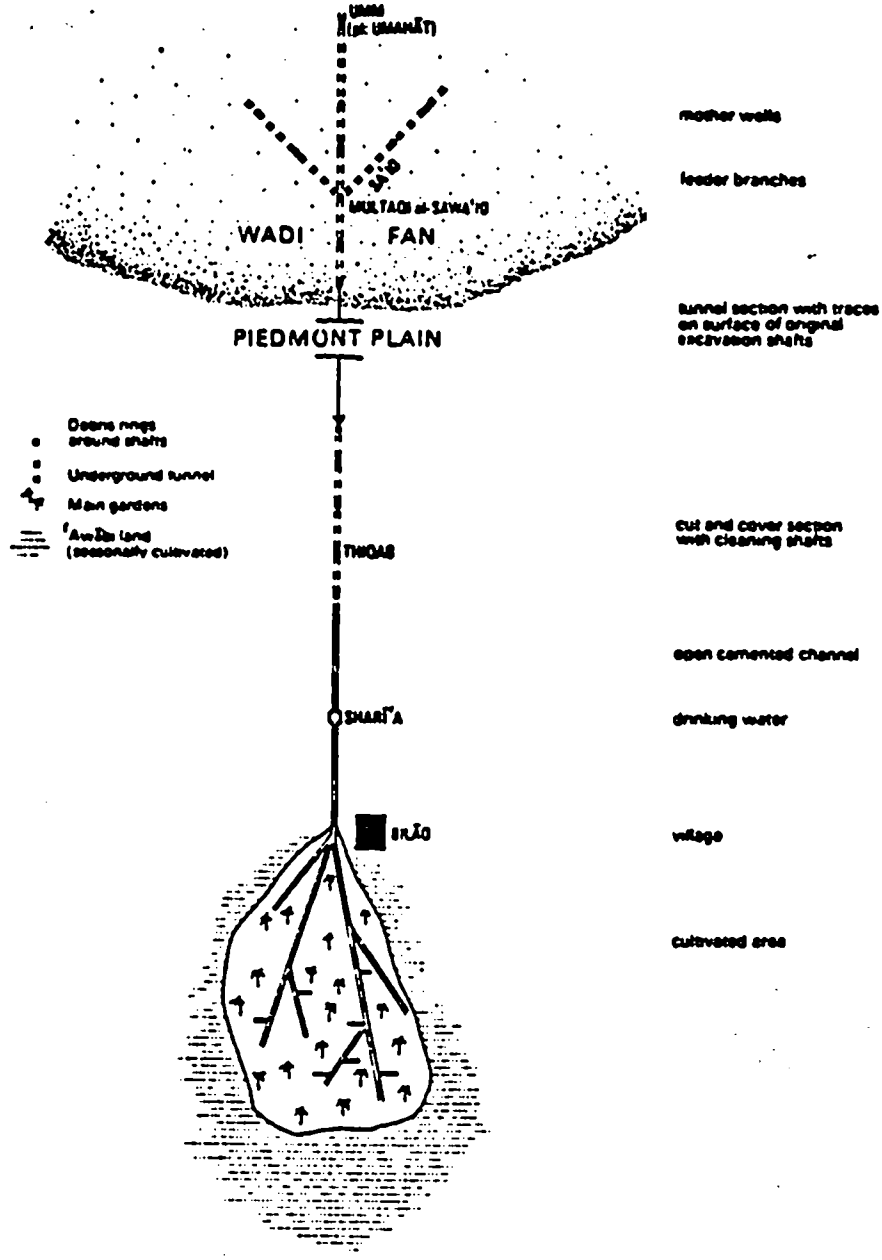
[5] The oldest documented qanat dates from the reign of the Assyrian king Sennacherib (701-681 B.C.). The spread of qanats throughout the Old World occurred with the spread of Islam beginning in the seventh century A.D. Eventually qanats were operating in Eastern Europe, China, Central Asia as well as the New World.

storage than could be obtained from tapping downslope. An upstream mother well is further vulnerable to variable flow and complete dysfunction in time of drought. Usually the optimal location is considered to be downstream of the head of a fan where substantial volume can be tapped at a reasonable depth (Figure 4). This location eliminates some of the transmission losses in the underground transportation of the water and is more economical. Multiple mother wells are not unusual, typically additional shafts are added to the system as deemed necessary or desirable. While they are usually 20 meters in depth, 40 and 60 meter shafts are attested in Oman as well. Given a good mother well or wells with a reliable base flow, other wells might be set into the shallow upstream aquifer to secure supplementary seasonal flow. Hence diversified systems are often characteristic of village settlements and most often contribute to the complexity of water sharing and distribution systems. The surveying of the qanat tunnel seems to have employed the skilled use of poles, string and drops of water to create a levelling device (Ennion 1965:779). Having thus surveyed the line of the qanat the tunnel or main gallery was excavated from the point where the aquifer emerged to meet the ground surface, usually about halfway to the settlement, back upslope to the mother well. Wilkinson (1977:80) cites 1/500 to 1/2,500 as the range of gradiant which enables water flow without initiating either erosion or silting within the gallery. The channel may be cemented in places which appear to be prone to erosion, depending on the particular geologic configuration being excavated. At other weak points some lining may be inserted. Ventilation and earth removal are facilitated by the periodic excavation of vertical shafts connecting the main gallery with the ground surface. These thuqba or thiqba (plurals: thuqab, thuqab) also provide access for repairs and cleaning. The shallow lower end of the qanat, or indeed

FIGURE 4: Qanat in plan.



From: Wilkinson, J.C., 1977, Water and Tribal Settlement in South-East Arabia.

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occasionally the entire construction, may be 'cut and cover'. This technique consists of channeling deeply into the earth from the surface then covering over the top. These sections are often stone lined to prevent collapse. The very last section of the qanat is a surface channel, usually cemented and often partly or wholly roofed over (Figure 5).

While these methods constitute the basic modes of water transport in Oman, there are variations and systems which combine the features of both the ghayl aflaj and the qanat aflaj. Such variations are usually adaptations which deal with specific topographical requirements.[6] Geography, as the primary determinant of qanat variability, explains much of the distribution of irrigation systems. The mountainous Hajar and Jebel Akhdar regions are characterized by short qanats, whereas in the Bajada the galleries are much larger as is illustrated at the Buraimi Oasis where the largest of 10 qanats reaches 9.5 kilometers. The Sharqiya region is the southernmost region where irrigation agricutlure is practiced and the marginality of this district has led to periodic migrations of the population.

Together the ghayl aflaj surface water management and the qanat subsurface channeling extract a great deal of the water potential of the mountain zone. In the Bajada the qanat plays a larger and more critical role in the stability of village settlement. In addition to this generalized distribution Wilkinson discusses localized practices which characterize smaller regions (1977:83-84).

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[6] The ummat sulayl (mother of the snake) falaj alternates underground sections with winding stretches of surface channels. Where there is a threat of flood damage overflow catchments are built into the falaj as well as embankments to divert excess flow (Wilkinson 1977:82). In the eastern mountains inverted siphon techniques are used, particularly in crossing beneath wadis, and in one instance a siphon falaj has been identified.

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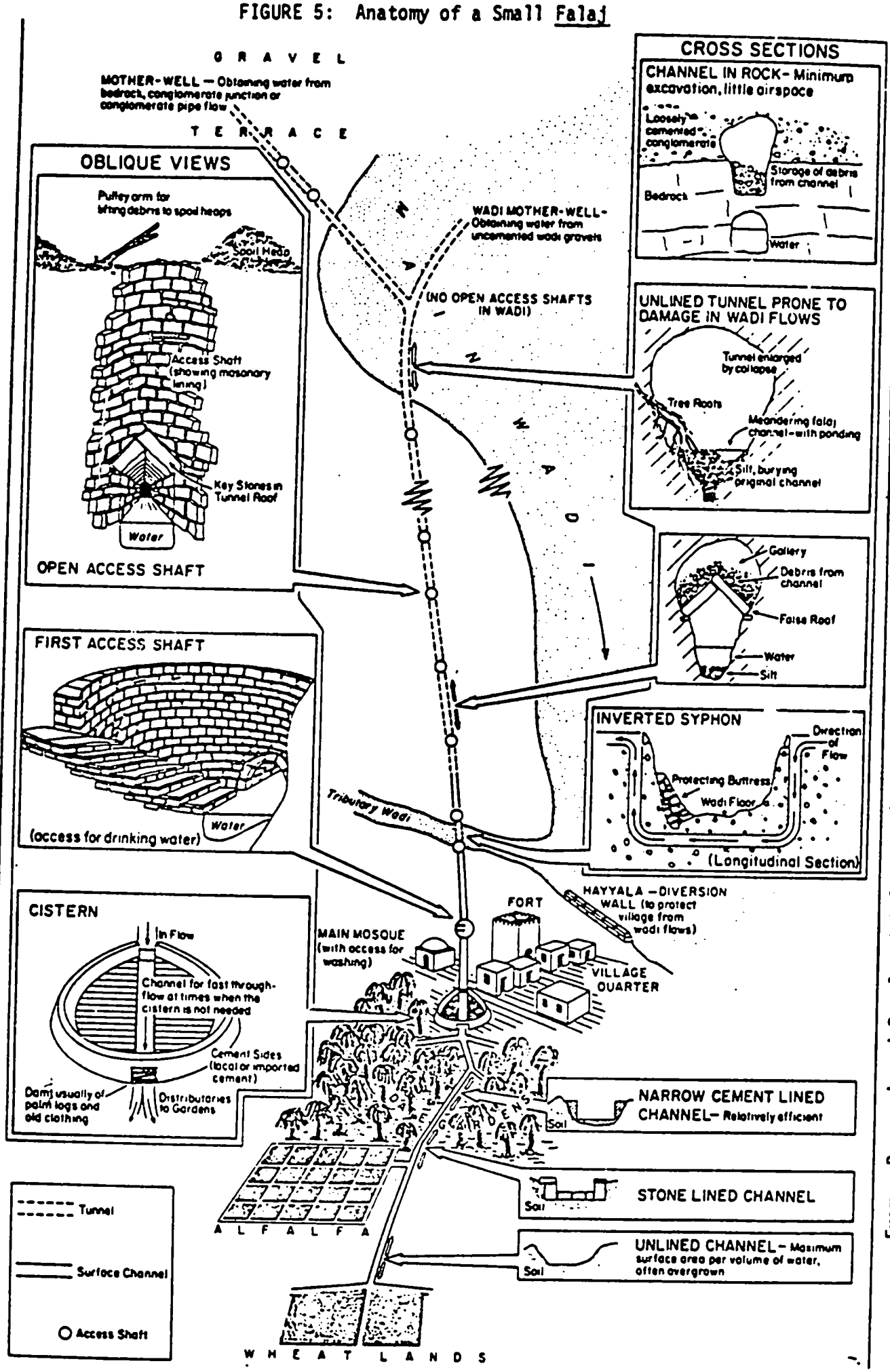
FIGURE 5: Anatomy of a Small Falaj



From: Research and Development Surveys in Northern Oman, Final Report 1978, Volume II, Water. H. Bowen-Jones, Project Director.

But the fact that regionally specific techniques have been employed is not to be considered the technological expression of cultural diversity.

Maintenance of the aflaj systems is a critical aspect of their proper functioning and of community security. Aflaj need frequent clearing and maintenance, although the amount is variable, partly due to climatic conditions, drought, flood, etc. On big aflaj maintenance was daily (Birks: personal communication). Yearly the joint owners of an aflaj hire labor to clear the open channels, the main diversion channels within the village and, at times, local labor will consent to clear the "cut and cover" sections. The upkeep of qanat aflaj galleries is much more complex and difficult. It is estimated that, apart from collapse, major erosion or other structural faults, the aflaj need to have major clearance approximately every 15 years. This is carried out by the 'Awamr, an Omani tribe which has an occupational monopoly in skills of clearing, repair, and construction of both wells and extensions to qanats.

As dangers, both real and imagined, are associated with the qanat gallieries, villagers are reluctant to enter shafts or tunnels for maintenance. The 'Awamr have developed technical skills in such work and their labor is much in demand. They work at piece rate in small groups of men, usually related, and with a few rudimentary tools. Many communities have a particular team which they solicit in times of need. Presently the 'Awamr, like the agricultural Omanis, have been affected by the rapid changes which are evident in most settlements due to the influx of new facilities and shortages of labor in the villages. Their role in the complex of factors which are currently effecting agriculture will be more fully discussed below.

4. Aflaj Irrigation Companies and Distribution of Land and Water Holdings.

a. The Role of Irrigation in the Community. The role of water and water sharing companies (committees; also called aflaj) in Omani agricultural settlements is one the one hand obvious and on the other hand very difficult to assess. Water availability together with aflaj-transportation, management, and distribution are the most critical aspects of all settled life in Oman (with the exception of the maritime ports which need to support only a minimum of agriculture), past and present. The engineering of these scattered and limited water resources has produced a pattern of small nucleated, self-sufficient settlements. The specific size of a settlement stands in direct relationship to the rate and reliability of base flow in the falaj or aflaj and because of the differential distribution of water sources in Oman there is notable regional variability in both rate of flow and settlement size. For these reasons settlement populations cannot exceed that which can be supported by the water supply. Population must be maintained within an optimal range, including sufficient numbers of persons within age and sex categories. The community must have enough labor for cultivation and proper maintenance of the aflaj and these duties fall heavily upon the male population between the ages of 15 and 40. Expansion of community resources, in the form of additional aflaj channels, etc. allows for community growth; yet no oasis community over 8,000 has been attested in central Oman and in the Bajada the average is less. It is possible, however, that while Nizwa and Ibri have populations of about 8,000 today, they (and other large settlements) may once have supported larger populations. Warfare and cycles of out-migration may have been significant limiting factors.

Because of the nature of the water supply and the huge communal investments the aflaj have traditionally been corporate enterprises. There have been times in Omani history when individual rulers had sufficient capital and motivation to make enormous investments but it is not always clear whether these were personal holdings, donated for community use, or rented out in shares. As the communal institutions upon which the subsistence of these communities was dependent the aflaj clearly have a central and critical role in the organization, social structure, and viability of any settlement. In this regard the role of aflaj is overt and pivotal.

The paramount position of irrigation has been the underlying assumption behind most writings about aflaj and cultivation settlements, and there has been little attempt either (1) to look at other social, economic and political institutions in Oman villages; or (2) to investigate the direct relationship between water management and social structure, political institutions, etc., in more than a cursory fashion which can be labelled as "irrigation-determinism". Generalizations emerge from the study of water distribution and use which indicate how little is known about these relationships. Water may be the critical element in village viability but the treatment of aflaj as either (1) autonomous, independent organizational isolates from which all other institutes are divorced, or (2) as prime social institutional movers from which all other institutions emanate, merely serves to obscure the complexity of irrigation communities in the social context.

b. Distribution of Water Shares and Rights in the Community. The detailed work of J. C. Wilkinson has provided a full account of the general

principles of water distribution (1974a, 1977), which is supplemented by some of Barth's more community-specific observations at Bahla. These descriptions pertain exclusively to inner Oman. There are differences in history and custom pertinent to water sharing between Northern and Central inner Oman. Wilkinson's description, although that of a generalized model of traditional practices, discusses some of these differences in practices. His use of the terms "northern" and "central" Oman (capitalized in this report) corresponds to the historical division of inner Oman with Ibri as the community marking the transition between the two (1974a:9).

Water sharing companies in Oman (aflaj) are a communal response to basic logistical problems of:

- water availability; investment in construction of aflaj to transport water to the settlement;
- water distribution within the settlement; establishment of principles of allocation, rights of ownership, purchase, rental and usage; adjustments of allocation according to increases and decreases in flow;
- development of a system of maximum efficiency of use; distribution of water resources with a minimum of water loss; and
- irrigation system maintenance, organizational principles which ensure regular upkeep of the system.

The aflaj as a response to these needs operates for the benefit of the entire community, and is recognized as such in the Omani legal tradition. Yet, although the aflaj is communal, and managed by a corporate decision-making body consisting of shareholders, it is not inclusive of all members of the community. The distribution of water rights within a community is based upon three factors: (1) public rights; (2) investors rights; and (3) transfer of rights: inheritance,

purchase, rental and waqf. The cooperative nature of Omani aflaj has often been extended to apply to the village social structure in general, although the data on which this extension is based are weak.

i. Public Rights. Despite this notion of aflaj ownership by shareholders, public rights are recognized and the entire oasis community has unlimited access to fresh water for non-agricultural purposes. At the point where the falaj channel enters the village drinking water may be obtained by all (Figure 6). The falaj may either pass directly to the gardens or pass through the length of the village. In cases of the latter the channel is covered, although access points are provided. Private residential diversion is prohibited although a channel might be linked with the mosque. In addition to drinking water, water may also be drawn for watering livestock and for domestic usage. Downstream from the drinking water outlets is the men's bathing area and further downstream, away from the male facilities, is the women's bathing area. The last area of public use before the water enters distributionary channels of the cultivated areas, is the mughsila where the dead are washed.

ii. Investors Rights. Although aflaj have not been constructed on a large scale in Oman since the seventh century A.D. the same principles of investors rights apply to falaj which, having fallen into disuse, are cleaned and re-operationalized. The shares of water are divided equally among the investors.[7] Should six individuals invest in re-operationalizing a falaj they would each, in principle, receive a unit of water in a rotation system, i.e., one day of water every six days. Usually some time share would be set aside for revenue for the falaj company itself in order to hire maintenance labor, make improve-

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[7] At various times in Omani Islamic history the state or more often local leaders have provided large investments for qanat repair, extension and improvement. It is unclear by what process shares in these aflaj were sold, distributed or otherwise made available for public use.

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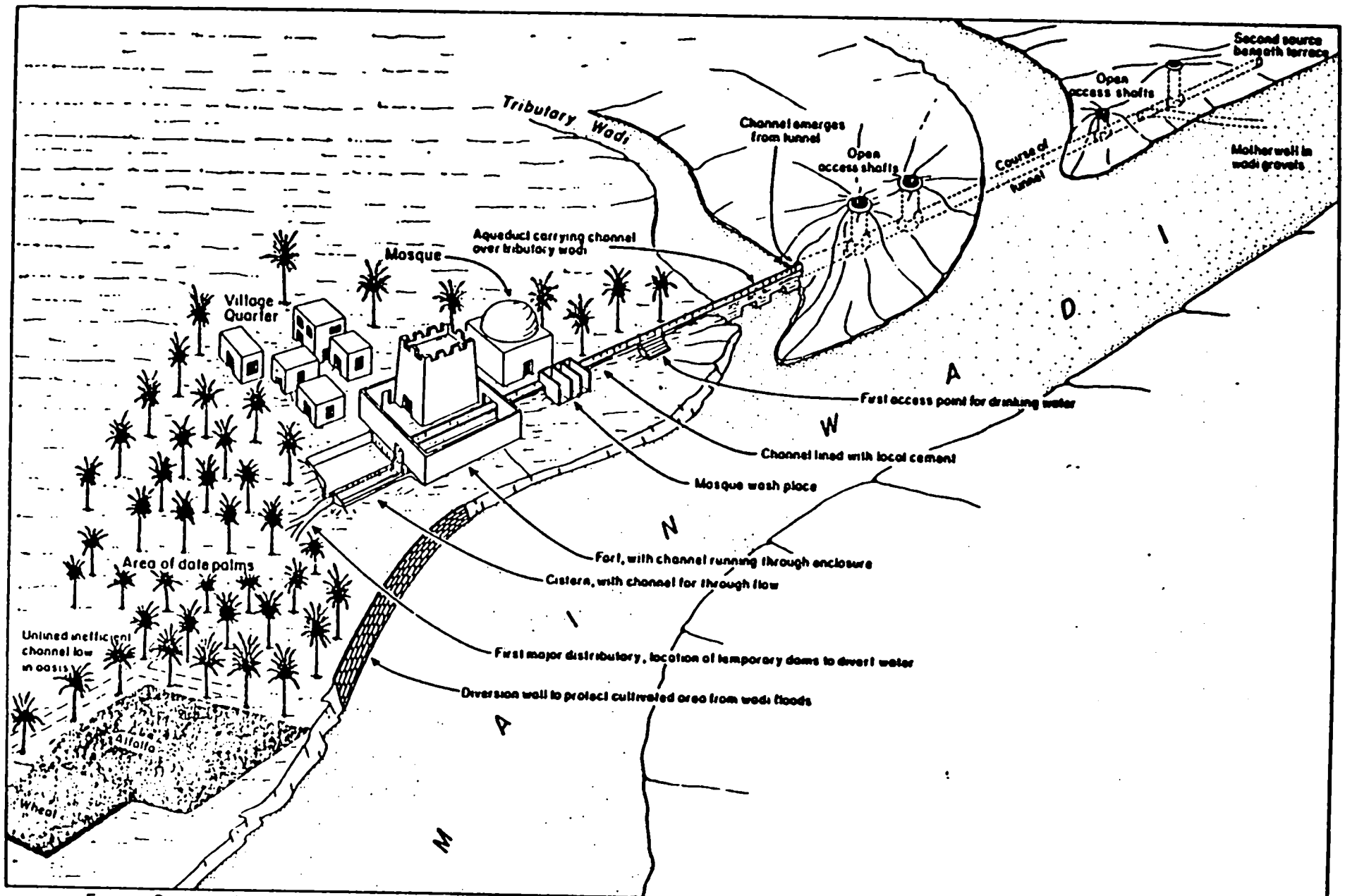
FIGURE 6: Sketch of a Typical Small Falaj



From: Research and Development Surveys in Northern Oman, Final Report 1978. Volume II, Water.
H. Bowen-Jones, Project Director

ments, provide security against drought, or for employee salaries should the company be large enough to require a bookkeeper or other personnel. In this case a seven day rotation schedule might be implemented with the revenues from the seventh share of water belonging to the company. There is no mention of any criteria beyond capital required for an individual to participate in this investor level of obtaining water rights.

iii. Transfer Rights. The great majority of those who hold rights of access to water are not investors. Within a generation or two the original investors shares have usually been transferred to others, such that the most current holdings are often indirect acquisitions. Shares of water rights may be subdivided or accumulated and an individual may have a variety of shares in different aflaj within a single community. Inheritance practices[8] are often responsible for an individual receiving water shares scattered over the rotation cycle of the falaj or even spread among different cycles among several aflaj. Impractical water shares, i.e., 5 minutes of water every sixth day in a channel far from the owner's fields, might be sold back to the company, rented to another cultivator with fields near the channel, given on permanent loan to a relative in exchange for a small portion of the annual harvest, or reallocated through any one of several arrangements. The smallest fractions of time allocations of water which an individual may own usually result from Islamic inheritance practice and the necessity for complete bookkeeping. But the owner may retain them as a reflection of status of ownership in the means of production. It seems likely that this is the case Wilkinson cites when he refers to

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[8] Islamic inheritance law is practiced in Oman. This ensures that 4ach sibling will inherit, albeit less for women, shares of the paternal estate. The inherited shares are frequently jointly worked and although women have shares which are recognized in the falaj books they may not always have the ability to make decisions regarding their alienation or the accumulation of additional shares. Male siblings may carry out such decisions on behalf of their sisters and other dependent females.

S6x

three relatives sharing 1/16th of a second of water (1977:108). When shares are sold back to the falaj company it then decides how these will be marketed. In the case of permanent sale of shares (as opposed to sale of temporary rights) the owners of the falaj or the falaj administrator (wakil) decide whether a price will be fixed for the share according to demand or whether it will be sold at public auction. It seems that pre-arranged sales take place as well, probably between relatives or neighbors wishing to increase holdings in a convenient location.

What, if any, exclusionary devices operate at the level of purchase of shares is unclear. None of the researchers refer to overt exclusion or discrimination against particular groups or classes, except, as described by Barth (1978), insofar as the very poor are excluded by virtue of their inability to pay. Barth's observations may reflect localized tribal constraints which vary among individual settlements. Wilkinson's examination of historical falaj records led him to conclude that water holdings were traditionally well distributed among tribes, clans and the population as a whole.

Access to water rights in the form of temporary purchase (a system of rental) is distributed in a highly active market and can constitute a large percentage of the water within the rotation cycle (Barth 1978). Rental of water rights, usually from shares belonging to the falaj company, al-zayida, the mosque waqf or more specifically qa'ada, the local government, bayt al mal, or from a neighbor, relative or through other mechanism of private arrangement, is sought for a number of reasons. An individual may need regularly to supplement permanent holdings, may wish to increase the area of cultivation, may need to maintain the level of water flow during drought, may own no permanent shares and depend exclusively on rental shares, etc.

With the present water shortages in Omani settlements (mostly due to either alternative investment opportunities or labor shortage for falaj maintenance)[9] the need for water has increased and the market has become highly competitive. Barth's example from Bahla demonstrates the potential for this rental system to become highly exploitative when scarce shares are auctioned in a cash-up-front market. In addition, the auctioning of limited water shares during the crucial pre-harvest period on the basis of weekly units increases risk and insecurity among the rental class which must continually re-bid for water, taking the chance of significant loss if, as the harvest draws closer and the price rises, they are unable to continue to compete in the water market. It is not possible from the literature to determine to what extent Barth's observations of these processes in Bahla are applicable in other oasis communities, nor is it clear what other factors, temporary and long term, explain the situation in Bahla. it seems that traditionally the right to bid has been available to all males with sufficient resources to enter the market. As women do own shares it is probable that men at times rent on behalf of female relatives, though the majority of holdings are registered to men. While the market may develop exclusionary devices these are economic and point toward growing class distinctions based on wealth and growing differential class access to resources as a result. There does not seem to be any explicit evidence for tribal, ethnic, racial or cultural barriers of access to water rights in the rental market.

Barth (1978) cites ethno-historical accounts from Bahla which indicate that isolated autonomous oasis rulers have at times amassed large personal holdings in land and water to the disadvantage of the poor who were excluded from the market and hence had the option only to support themselves as daily

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[9] Labor shortages leading to the decline of falaj upkeep have had the further effect of aggravating the impact of drought and further reducing water supplies. This has been a problem during the recent drought which affected the Interior from 1977 to 1980/1981.

wage laborers (Barth 1978:7). This suggests that periodic inequality in allocation due to political corruption can be a significant factor in allocation of water rights, but such is not in accordance with the social principles of the relationship between the aflaj and the community.

Adjustments in water sharing in times of increased or decreased flows are distributed equally among all water holders. When the flow from the qanat increases more water may be allocated to each shareholder and/or to the falaj company. In cases of decrease each individual shareholder receives either less water in the rotation or the rotation period is lengthened while the share remains fixed. Although the disadvantage is absorbed by each shareholder proportionately to their holdings, the decrease inevitably puts stress on the economic system and may lead to a decrease in equitable opportunities among citizens.

5. The Falaj Company.

a. Organization and Administration. The size of the falaj, measured by its flow, and the number of shareholders in the falaj company determine to what extent its functioning will be formally organized. A small falaj with a few owners may be able to maintain their system of rotation, dawran, through informal cooperation. When repairs are needed or decisions have to be made concerning changes in distribution to accommodate changes in the pattern of flow, the shareholders meet to discuss the situation. If they cannot reach full consensus the majority vote carries the decision.[10] Should

[10] According to the Durham Report however, "Whether the shaykh or shaykhs of the community are actually members of the falaj 'committee' or not, they generally have some influence on the running of the falaj, and in some cases dominate it to the extent that they may look upon the falajes as their own" (II. 1978:143).

any shareholder wish to appeal the decision the case is heard before an Islamic judge (qadi). The decision of the qadi is binding and reflects custom rather than fundamental Islamic law. Any decision with regard to the community water supply is predicated upon two principles which underscore the significance of ecology and cooperation: (1) water, including its proper distribution, is essential; and (2) decisions which effect the community are binding upon all members.

If the distribution of shareholding is complex the falaj company hires as many persons as are necessary to regulate the system. Frequently a single employee performs many tasks but usually the most critical is his role as keeper of the falaj book, a job which involves the detailed recording of all transactions of water shares. The falaj book is a permanent record of ownership through which generations of shareholding may be traced and disputes of ownership resolved

A large-scale falaj company such as the falaj at Mudayrib or Falaj Malki of Izki illustrates the model for functioning of more complex administration (Bonnenfant and Harthi 1977; and Wilkinson 1974a:38). In these instances several specialized personnel are responsible for large aflaj.

The wakil, agent, is the head administrator of the overall system. His duties consist of (1) financial responsibility for the corporation, including the organization of marketing shares of falaj water (qa'ada and/or zayida), and supervision of the auctioneer (dallal); and (2) arrangements for falaj maintenance. His salary is drawn from the income of the falaj and varies locally, although it is often equivalent to the wages of a daily laborer, or two if the wakil directly supervises repairs. The wakil's decisions are normally made independently of the major shareholders. When non-routine

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expenditures are necessary, however, a majority decision is called for.

The 'arif (literally "one who knows") or water distributor insures that holders receive their allocations with proper timing. This position had required skill in measuring time, although today watches are most commonly used (Birks: personal communication). This trusted position is frequently hereditary. The 'arif also supervises the bayadir (agricultural laborers) who raise and close the sluice gates. Payment is made from one or a combination of the following: (1) revenues from the falaj shares; (2) water rights; and (3) payment forwarded by landowners proportional to their holdings.[11] On smaller aflaj the bayadir arrange schedules for water distribution.

In the case of routine falaj maintenance local bayadir are hired for daily wages. For major service to the falaj beyond routine chores non-local assistance is employed. Basir are water diviners (often blind), many of whom belong to the 'Awamr tribe. They advise on water locations, particularly source areas, relevant to improvement or repair of a falaj. They are paid according to their success. 'Awamr tribesmen are employed as experts in subterranean earth works and they are paid on a contractual piece rate basis.

The falaj company may also employ: (1) a holder of the falaj book; (2) his clerk; and (3) the auctioneer, usually an ex-slave. Within the broader community the wakils may be responsible for other institutions (educational, religious, etc.), which are supported by qa'ada shares which the falaj company has set aside as endowments (waqf).

Regardless of the level of complexity in falaj administration all disputes concerning water allocation or the functioning of the falaj are referred

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[11] At both Izki and Mudayrib two 'arifs are employed, one on each of the two major branches of the falaj.

to the qadi, religious judge. His decisions follow the same set of priorities discussed above in the instance of his settlement of conflicts within ad hoc falaj systems. However, the shareholders retain the power to remove falaj personnel if they appear to be violating the trust of their office and not conducting equitable distribution of water according to shares.

b. The Falaj Share. The falaj shareholders usually set aside a share of the water cycle, dawran, to generate corporate revenue. This is then used in a variety of ways: employment of personnel; security against drought; endowments for religiously related institutions (religious education, charity, support of mosques, etc.); and community services (extermination of vermin and harmful insects, community hospitality, community fines in rare instances and previously the maintenance of defensive fortifications and arsenels) (Bonnenfant and Harthi 1977:112). This share is administered by the wakil.

If the falaj share of water is substantial enough it is usually allocated with land and the revenue is collected from the yearly sale of produce. Alternatively, the share may be parcelled into units and sold at one year intervals as water rights. But commonly all or portions of the share are auctioned on a weekly basis. The price of the water is a function of the rate of flow and both may fluctuate seasonally, as the result of long term climatic trends or according to the condition of the falaj. But demand is also a factor in the establishment of prices, as is particularly evident at weekly auctions close to harvest time. Predictably the price structure will also reflect differences between day and night shares as well as seasonal demand. Auctioning of water is a public process carried out in the market and cash payments are made immediately.

Falaj shares have the legal status of qa'ada or zayida. The qa'ada share is created from the falaj share when all or a majority of the shareholders agree to donate the share to waqf, religious endowment. When a qadi confirms this bequest it becomes the property of Islam and remains inalienable tenure permanently. In putting a share into waqf the falaj corporation must explicitly state the beneficiaries of the endowment. The majority of the waqf will be assigned to falaj maintenance but community institutions often receive an allocation. Once established the revenue from waqf endowments cannot be applied to uses other than those stipulated. Even in instances where the falaj share generates far more income than is necessary, the qa'ada cannot be altered. When additional income is necessary the qa'ada share may be leased, but never sold.

The alternative falaj shareholding is the zayida, a non-waqf share which may include all of the falaj share or a portion should waqf shares be held in addition. The zayida offers greater flexibility in the amount of revenue it generates because it can be altered. The major shareholders of the falaj corporation decide what size falaj share is desirable for adequate operation of the system.

Whether the falaj shares are qa'ada or zayida, if emergencies arise and funds are suddenly needed for expensive repairs to the falaj, a proportional tax may be collected from all shareholders.

c. Distribution of Water and the Rotational Cycle. The physical network of distribution channels and their spatial relationship to cultivated areas in any Omani agricultural settlement are related to the nature of the irrigation system and the village social structure, as well as being established within

ecological parameters. In this section the nature of the irrigation system will be considered with regard to principles of water distribution. Social variables will be discussed below.

Falaj settlements are internally planned in order to provide equality of distribution per shareholder in both the volume of water received and the maximization of land which can be reached with a minimum of transmission and evaporation loss. Wilkinson has demonstrated (1977:103) that bifurcation, the principal method of channel splitting used in Oman, achieves this for it best suits the character of the gravity flow falaj system. The major channel bifurcations which are characteristic of most irrigation communities reflect major divisions among local social groups. Many of these settlements are agglomerations of villages or haras (quarters) the fields of which are each accessed by a major channel in most cases. There is, however, a maximum number of subdivisions that can be laid out with distribution of "equal water rights at the point of cultivation" (Wilkinson 1977:22). Thus an artery serving a community within the settlement proper can only be split a specific number of times (dependent on quantity and reliability of base flow) without causing the system to lose effectiveness. Generally the main channels are fixed entities but the individual owner of a garden may adjust channels within his areas of cultivation at will, as long as no other person's water rights are affected.

As with most other aspects of this system, the conversion of shares of water rights into units of time allocation is highly variable between communities. Some general principles may nevertheless be outlined. The dawran is the cycle or period of time in which one complete rotation completes the dis-

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tribution of water to all shareholders of the falaj company. The sequence of distribution of water to gardens is in a fixed order. The dawran is subdivided into units, usually by days, which were often originally named for each shareholder. The most frequent legal term for a dawran unit is a khabura, known in local speech by a variety of terms: radda, rabi' or ad. At the onset of each khabura water will be appropriately directed although further subdivisions occur within the gardens as well.

The khaburas of the dawran are further divided into time shares. A bada is a subdivision of a khabura but in different villages it can represent different lengths of time; examples range from a 24 hour period to a third of a day (Bonnenfant and Harthi 1977:111; and Wilkinson 1977:107). In many places the terms khabura and bada have become synonomous. In Northern Oman fractional terms are used to subdivide the bada; i.e., rabi' (plurbal arbu') each of which represents one of four quarters of the bada. The rabi' in turn consists of suds (plural asdas) or six sixths and hence a bada equals 24 suds, units which in many Omani communities correspond roughly to 1/2 hour time shares.

In Central Oman the bada is subdivided into athar and an athar is an absolute time unit. The number of athar in a bada varies therefore according to the length of the bada. Smaller units within the athar are fractional, as those in Northern Oman, although units as small as a sixth, equivalent to 5 minutes are rare (Bonnenfant and Harthi 1977:111). A complex system of annual seasonal alterations to the dawran and bada insure the continuation of equal distribution throughout the course of the year.

There are two traditional techniques for measuring time which the 'arif (water supervisor) or bidar (plural bayadar) (agricultural worker) rely upon in

allocating shares. During the day various makeshift sun dials are employed while at night the movement of celestial bodies is observed. These techniques supplement the experience of the 'arif or bidar and detailed consultation is usually not necessary except in times of drought. Watches are occasionally used now but the old non-mechanical techniques have been retained as well.

d. Maintenance Responsibilities. Maintenance of falaj systems is critical to their proper operation and if neglected the system eventually falls into dysfunction. The longer that maintenance or repair are postponed the greater the loss to the original investment and the greater the risk of major disaster. Frequent but simple clearing has customarily been undertaken to prevent the high cost of the specialist work necessary when problems accumulate. Usually the maintenance of the primary channels is arranged by the falaj corporation through use of qa'ada or zayida shares. The networks of garden channels are the responsiblity of individual landowners. Referring to maintenance, Wilkinson states that "On small aflaj where there are only a few owners, this can be arranged on an ad hoc basis, while in areas with capitalist land tenure the landlord will carry out the necessary maintenance and repairs" (Wilkinson 1974a:28). Both individual landowners and the falaj company usually hire bayadir to perform the manual labor involved in routine maintenance. This term pertains to an occupational class of agricultural workers who also perform the daily regulation of the irrigation system, either amongst themselves or under the supervision of an 'arif.

6. The Izki Irrigation System. While the above description provides a generalized picture of the most common characteristics of water sharing systems in Oman there are a few major exceptions which work on an alterantive set of principles. Aflaj in inner Oman which operate on the "Izki System" are found at Qarut, 'Awabi, Nizwa and, the best documented example, the Falaj Malki at Izki (Wilkinson 1974a:31 and n5). This sytem of allocation departs from the notion of fixed land and water allocation explicit in the standard dawran. By separating land from water a shareholder, in principle, had rights to water before the network of bifurcation began to divert it. An individual may claim his water share whenever he wishes, and draw it from whatever point he wishes. This counteracts the disadvantages of holding numerous fragments of water shares throughout the system.

The system underwent some alterations at Izki when, under an early 20th century Imam, the major flows between the two settlements of Izki, Nizar and Yeman, were regulated on an alternating basis. This served to reduce some of the water losses which the system sustained through its non-rotational transportation of water. The waste which was perpetuated in the constant switching of the direction of the flow coupled with delays in the transfer of water could lead to a loss of as much as 4/5 of the total amount of water.

7. Summary. In conclusion we will outline the processes of decision-making and access to rights of use and ownership among Omani falaj or water-sharing companies. Decision making as to the disposition and allocation of water rights is carried out by a maximum of three institutions in a village community: (1) the falaj corporation -- the major holders of shares in this company make decisions concerning water allocation and corporation management

by a majority vote; (2) bayt al mal -- property of the Muslim state which generates public revenue and is administered by the town wali or governor who appoints an administrator to manage the shares; (3) other waqf property -- other endowments for religious benefit are managed by an Imam or other religious authority.

Rental or users rights may be obtained from any of these institutions but the following factors may determine which individuals benefit: price structure, demand, water supply, season, etc., a combination of these supply factors and the cash holdings of the bidder determine who will receive water. The level of competition varies from place to place and season to season as well as with the condition of the falaj but in many communities not all of the people can obtain water when they need it, even during non-drought conditions.

The individual plays a major role in the decision making process. He will decide how and when to bid for water, decide when risk taking is appropriate and make arrangements with neighbors and/or relatives for sharing, cooperative farming, borrowing, rental, etc., of resources. Placement of channels, distribution within the field, i.e., how much water the palms receive and how much the seasonal crops receive, etc., are all on-going concerns for the individual. It should be noted however, that individuals who manage water usually represent a nuclear family or extended family production unit so that the decisions are those of the unit. Decision making in the family will be discussed further.

FISHERIES

The importance of fishing to the national economy cannot be over-stated. "Fish is the major source of animal protein for the majority of the population of the Sultanate..." (Durham Report V. 1978), and although the price of fish has escalated markedly during the last 10 years, its contribution to the national diet can be expected to increase. This is due to the reported decline in the availability of meat, the preferred source of animal protein in Oman, as male herders succomb to the attraction of wage labor migration to other parts of the Gulf (Birks 1976, 1978). The movement of fish into the Interior, once exclusively transported by camel and donkey in cured form, is now undertaken by truck, and iced fresh as well as dried fish are available in some of the Interior markets.

Omani fishing is carried out mainly on an artisanal basis, although the initial development thrust of the Omani Government seemed to favor capital intensive, high technology fishing. An American consulting firm that was hired "dismissed out of hand" the palm raft shāsha, the characteristic fishing vessel of the Batina coast, and recommended instead "a small fleet of glass fibre boats, some of which were equipped with fish-finding radar, and a land base with a deep-freeze store, an ice plant, a refrigerated lorry, and other modern fish handling and marketing equipment (Donaldson 1980:491). The cost of this pilot project was $3.1 million, and it quickly became clear that it "had failed in every respect". Bypassing the knowledge and skills of local artisanal fishing in the attempt to impose a solution to the problem of inadequate production, the consultants had recommended a program that proved to be substantially discrepant from local conditions. Donaldson, who participated in the Durham University study of fishing in Northern Oman, notes wryly:

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> In view of the poor performance of the Sohar Pilot Project and of the disastrous record of large-scale capital-intensive fishery projects in Oman's neighbours in the Arabian Peninsula, it is fortunate for Oman that the Mardela-FMC proposals were not fully implemented. It is perhaps not irrelevant to point out here that fully one-quarter of the FMC report to the Omani government consisted of colour advertisements for FMC machinery and other equipment, most of which for Oman was of dubious applicability (Ibid:493, fn. 5).

The rich marine resources along the 1600 km Omani coast were exploited mainly by foreign trawlers that made no contribution to either Omani consumption or revenues. Hence one can appreciate the Government's desire to increase the fraction of the yield to the direct benefit of the Sultanate and its people. Mardela estimated that the annual harvest by Omani fishermen of approximately 40,000 metric tons could be increased 15-fold for marine species already part of the Omani consumptive inventory plus a further 10,000 to 60,000 metric tons of tuna (cited in Clements 1980:134-135). In 1976 a three-year concession was granted to a consortium of Japanese fishing firms, who outbid competitors from South Korea, Iran, and India for the rights to fish a deepwater area off the southeastern coast of the Sultanate, including the waters of Kuria Muria Bay, Suqrah Bay, and the Gulf of Masirah. The desert region along these waters is thinly populated, and relatively little indigenous fishing is carried out there.

> It was expected that this project alone would increase the annual catch by 15 to 20 percent. The agreement provides that the government of Oman will receive 40 percent of the catch; most of this will be sold back to the Japanese. It therefore seems likely that nearly all of the catch will be exported to Japan. (Nyrop et al 1977:375).

While there has been a fair body of literature describing marine industries and technologies in the Arabian Sea (v. Bowen 1949, 1951a, 1951b, 1952; Prins 1972-1974), the only systematic attempt to relate that technology to the socio-economics of artisanal fishing in Oman has been made by the Durham Univer-

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sity group (Durham Report V. 1978; Donaldson 1979, 1980).[12] The bulk of this section is drawn from the Durham University studies, and focuses on artisanal fishing and marketing on the Batina coast centered in Khabura, plus a consideration of fish-marketing in the Dhahira centered on Ibri. The work involved three field seasons for a total of 14 months between November 1974 and September 1976. Donaldson returned during the winter of 1977-1978 to carry out a comparative survey of fisheries in Oman and in other Arabian countries. The survey relied primarily on formal questionnaires, administered to fishermen, supplemented by informal interviews and observations, plus interviews with government officials, merchants, and boat builders. While the survey was quite comprehensive for the area examined, it lacks the depth of ethnographic reporting, and it is hoped that there will be such in-depth studies in the future, building on the excellent base of quantitative data provided by the Durham group. Especially lacking are descriptions and analyses of social organization, both at the household and at the community/settlement level, to allow us better to understand decision-making and the allocation of resources among the repertory of available economic activities. In terms of the description of the technology of artisanal fishing, the Durham study is first-rate, and its authors are to be complimented.

While it is customary to invoke 1970 as the division between the "traditional" and "modern" sectors of the Omani economy, in the case of artisanal fishing off the Batina coast that date must be pushed back to the mid-1960s, when nylon nets and outboard motors first became available. The impacts of

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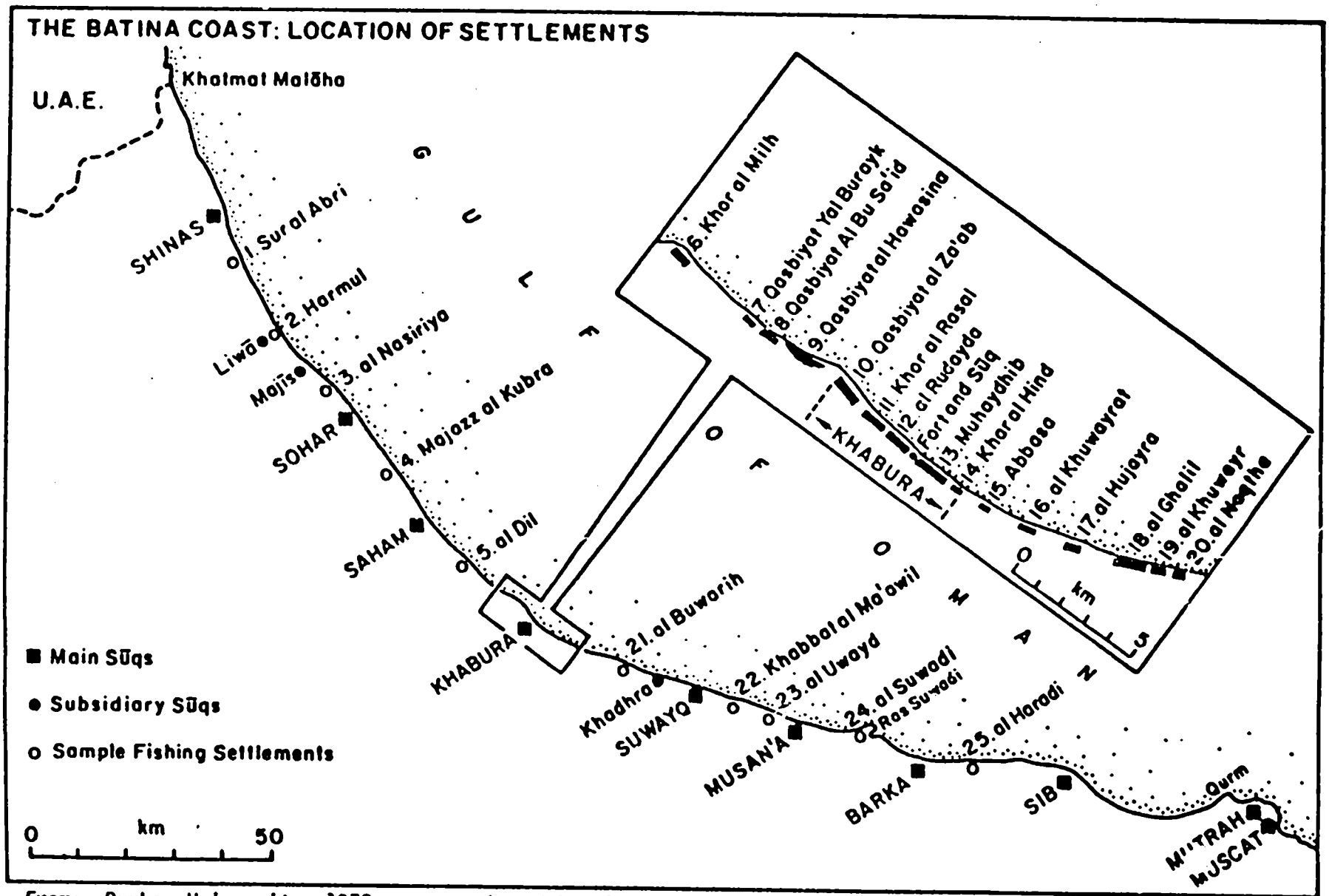
[12] We have not yet been able to obtain the following two documents referenced in the Durham Report (1978, Vol. V): G. C. L. Bertram, The Fisheries of the Sultanate of Muscat and Oman, Muscat, 1948; and I. Boulos, The Development of Fisheries in the Sultanate of Oman, F.A.O. Department of Fisheries, and Ministry of Agriculture, Fisheries, Petroleum and Minerals, Muscat, 1975. The Bertram report is noted as being of more than limited value (Durham Report V. 1978:4).

71x

FIGURE 7: Chart of the Batina Coast Indicating the Fishing Sites Included in the Study



From: Durham University, 1978. Research and Development Surveys in Northern Oman, Final Report. Volume V. "Fishing and fish marketing".

these innovations were "revolutionary" (Durham Report V. 1978:8), and their initial adoption by fishermen was made entirely on their own, without government encouragement or assistance. Donaldson suggests that this event falsifies the claim that traditional fishing is inherently and irrationally conservative, and that increased production can be achieved only through an abrupt break with the past (1980). Donaldson's survey results "show clearly that certain innovations which were permitted from the mid-1960s onwards spread rapidly through the fishery, being first introduced by indigenous entrepreneurs and then adopted by the fishing and fish trading communities more generally" (1980:483).

1. Equipment. Batina fishermen employ an impressive variety of tackle, the choice of which appears partially dependent on local custom and partially on cost. "Of all the fishermen interviewed, 90% owned nets, 46% owned traps, and 90% had handlines" (Durham Report V. 1978:42). Most of the harvest comes from the nets and traps. The kind of net employed varies not only by price, but also by the number of persons involved in its operation. The smallest castnet (sālya) is thrown by a single man wading out from the shore or from a boat. The average total cost of a castnet is ca. RO 18. The large beach seine (jārūf), which involves a boat to play out the net and up to 50 men to pull it to the shore, may total about RO 250. Covering a zone of 100 m. or more, the beach seine can quickly deplete the area of fish, and it was claimed that its use had been forbidden by the government in several settlements in order to protect the poorer fishermen who had access only to castnets. The Durham team was unable to verify the authenticity of the claimed ban, which may date back a hundred years, but it is clear that the jārūf is far less common in the Lower

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Batina, where 88% of those interviewed claim to use castnets, than in the Upper Batina, in which castnets are claimed by only 11% of the respondents. "It is notable however that today fishermen on the Upper Bātina (who prefer large boats to dugouts) are able to invest on the average three times as much capital in their boats and engines as the Lower Bātina fishermen" (Ibid:24). Offshore seines are worked from boats, and frequently involve two or four boats working together. Even where the boats are motorized, oars are used to encircle the prey in order not to frighten them away from the net. Drift nets and fixed nets are also employed, the size and complexity of which varying with the wealth of their owner. Today cotton nets have been replaced entirely by imported nylon, mainly of Japanese manufacture and purchased either in Dubai or in Matrah (the latter price said to be between 10% and 20% higher than the former). The average capital investment in nets is shown in the following table. The clear stratification between poorer fishermen who own only the palm raft shāsh and wealthier fishermen who can afford wooden boats is evident. Nets must be replaced every two to three years, giving an amortized cost of between 100 and 150 Riyals yearly. The annual replacement costs of wire traps (which have entirely surplanted traps woven from palms) is about 80 Riyals. The use of floats on the Batina traps seems to contradict the insistence of Bowen that the "Arab fisherman never marks his traps with floats...because he fears they will be plundered" (1951b:386). Bowen suggests that the use of the cuttlefish to bait traps (and longlines) indicates the frugality of the fishermen, who are Quranically forbidden to eat it themselves.

TABLE 1: Average Capital Invested in Nets per Fisherman

	All respondents	Wooden boat owners	Owners of shāsh only
Netting alone	RO 214	RO 300	RO 85
Nets including ropes, floats, anchors, etc.	304	392	159

(Ibid:34).

Note: at the time of the survey
RO 1 = £ 1.40 = $3.36

With the exception of handlines and castnets, fishing tackle is deployed from a boat. The shāsha (which is technically a raft since it floats on top of the water rather than displacing it), originally made entirely from palm trees, is the most common vessel in Northern Oman. "It is also the smallest, lightest and cheapest..." (Durham Report V. 1978:44). The traditional materials were locally available, and obviated the need to import wood, which is relatively rare in the region. Today, while the hull is still built from stripped date palm branches, the palm branch butts used for filling have been replaced by even more bouyant polystyrene, and palm fibre twine has been replaced by more durable nylon cord. Construction techniques are simple enough so that fishermen often build their own, although there are specialist shāsh builders. Because they become water-logged rapidly, many fishermen own more than one, alternating their use to allow them to dry out properly. Local availability of building materials and the fact that many fishermen can construct their own shāsh keeps the cost to an average RO 12 (with a range of from RO 5 to about 15), with a life expectancy of two to three years. While the costs of polystyrene and nylon are initially higher than the traditional

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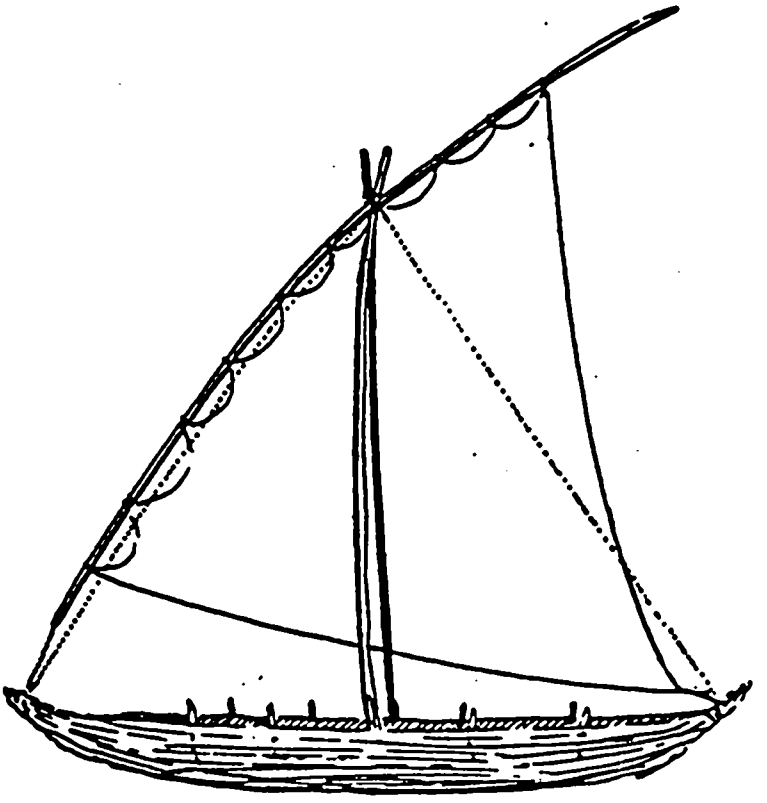
FIGURE 8: A Shāsha with Double Mast and Sail



From: Durham University, 1978. Research and Development Surveys in Northern Oman, Final Report. Vol. V. "Fishing and fish marketing."

elements they replaced, their true cost may be lower because they are re-usable. Traditional propulsion was by oars and sail, though today many shāsh have been modified to accommodate outboard motors:

> In the winter of 1974-75 only a very few fishermen had [installed engines in their shāsh]. On a representative 20 km stretch of the central Batina coast, only one fisherman out of a total of some 300 had fitted his shāsha with a motor... A rectangular well had been cut by the fisherman through the body of the shāsha towards the stern and a board serving as an engine mount had been secured to the forward edge of this well...
> Had the American consultancy team been correct in dismissing as misguided any attempt to motorize shāsh, the experiment by the fisherman...would have perished. By August 1976, however, eleven more motorized shāsh had appeared on the same 20 km stretch, while by January 1978 motorized shāsh has become almost as common as shāsh without motors in some settlements. Moreover, many of the fishermen who had fitted motors to their shāsh were already owners of motorized wooden craft... (Donaldson 1980:486).

While poor fishermen may own only shāsh, many of the wealthier fishermen who also possess more expensive boats own them too. This is because despite its primitive appearance, the shāsha is exceptionally well adapted to the conditions of close-in fishing. It is stable and resiliant, and can be safely operated by a single man rather than the three to five men required for the larger wooden craft. "Therefore, when the weather is rough or when insufficient crew are available, the fisherman who owns a wood boat often chooses to leave it beached and use his shāsha instead" (Durham Report V. 1978:50). It is interesting that while the first shāsh to be motorized were those built initially for oars and sails, today shāsh are being designed specifically for use with engines, and tend to be somewhat larger than the traditional ones, though retaining their virtues of cheapness, resiliance, stability, and lightness.

The rapidity with which these innovations spread among Batina fishermen evidences once again the inherent willingness of small producers to experiment when they themselves have sufficient information to assess the consequences of change. It is interesting to note that while recently the Government of Oman has provided low cost loans to fishermen to enable them to motorize their craft, these initial shifts to power were done without such assistance.

As can be seen on Table 2, there are six major types of wooden fishing boats used on the Batina. These boats typically have a single owner, and that owner typically has but one boat. Of the 267 fishermen responding to the survey, 155 men owned 177 wooden boats. Of the remainder, 4 were captains of vessels they did not own, and 108 owned shāsh only or no boat at all. Only 14 out of 177 boats had more than a single owner, and in most of those cases the owners were members of the same household (as two brother, or a man and his son). The average crew size was three per boat, with the modal crew size

77x

TABLE 2: Wooden Craft Used on the Batina Coast

Structural Characteristics		Typical dimensions (metres) (length x beam)	Type of fishing	Type of Motor (if motorised)	Local nomenclature				Terms adopted in this report	
					Lower Batina	Central Batina	Upper Batina	Arabian Gulf and elsewhere in region		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Double ended- both stem & stern pointed	Plank-built	10m x 2m	All-purpose	Inboard diesel	(hūri)* (lānsh)*	hūri	shāhūf	lānsh	large plank houri	Large all-purpose vessels
Transom stern	Plank-built	10m x 2m	All-purpose	Inboard diesel	(shū'i)*	shū'i	shū'i	sambūk, mashwa	shū'i	
Double ended- both stem & stern pointed	Plank-built	7.5m x 1m	All-purpose	Outboard petrol	hūri	hūri	hūri or shāhūf		small plank houri	Small all-purpose vessels
Double ended- both stem & stern pointed	Dugout	7.5m x 1m	All-purpose	Outboard petrol	hūri	hūri	hūri	hūri	dugout houri	
Concave prow; tall vertical stern piece	Plank-built	13m x 2m	Beach seine fishing	Never motorised	(badan)*	badan	badan	(badan)*	badan	specialised beach seine vessels
Straight, pointed prow; vertical stern piece	Plank-built	13m x 2m	Beach seine fishing	Never motorised	(shāhūf)*	shāhūf	baqqāra/ bakara	'amla	shāhūf	

*vessel type rare or non-existent in this area.

From: Durham University, 1978. Research and Development Surveys in Northern Oman, Final Report. Volume V. "Fishing and fish marketing."

as two. The largest crew, including the captain, was seven. About 40 percent of the crews come from a single household.

The larger boats are equipped with diesel inboard engines, while the dugout and small plank-built hūris are now adapted to outboard motors. The dugouts are very common in the Lower Batina where they approximate the shāsh in number. The basic shell is not made locally, but purchased in Muscat and Matrah from traders who import them, perhaps from the Malabar coast of southwest India. The average cost of a dugout is RO 370 and RO 477 for the small plank hūri, 30 to 40 times respectively more costly than a shāsha. It appears that the hūri were relatively uncommon on the Batina until outboard engines became available (Durham Report V. 1978:72). For beach seining, the large shāhūf and fishing badan were used, and were never propelled other than by oars. These large human-powered boats have declined substantially today due to the large crews they required and due to a disappearance, since 1970, of large close-in shoals of anchovy and sardine (Ibid:73). Today approximately 32 percent of the boats are large, plank-built all-purpose craft, about 62 percent are hūris, small all-purpose craft, and the remainder the specialized beach seine craft. Although the original engines available both outboard and diesel, were of Western manufacture, today Japanese makes dominate the market. Yamaha, which are cheaper than Evinrude and Johnson, the competitors, control 80-85% of the outboard market, and Yanmar has about 90 percent of the diesels. Fishermen complain about the difficulty of obtaining competent service for their engines.

> It is felt most acutely by the owners of inboard diesel engines, firstly because spare parts are in general available only from agents in Dubai..., and secondly because only one mechanic who is genuinely competent and

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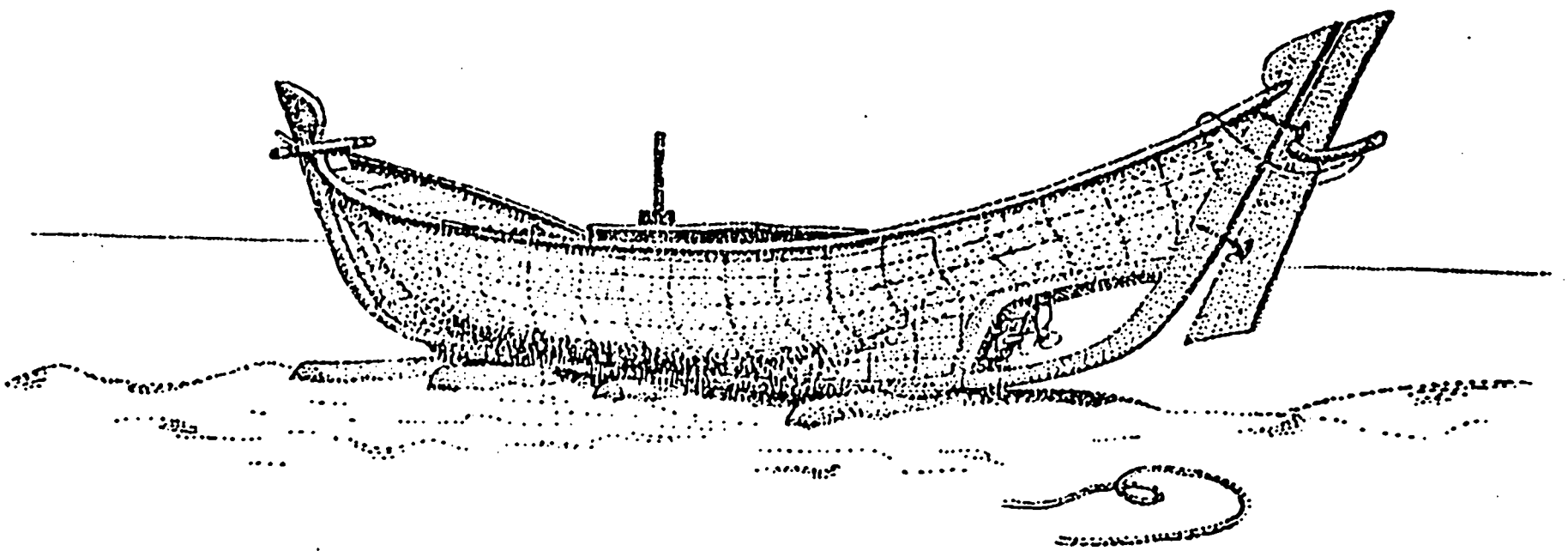
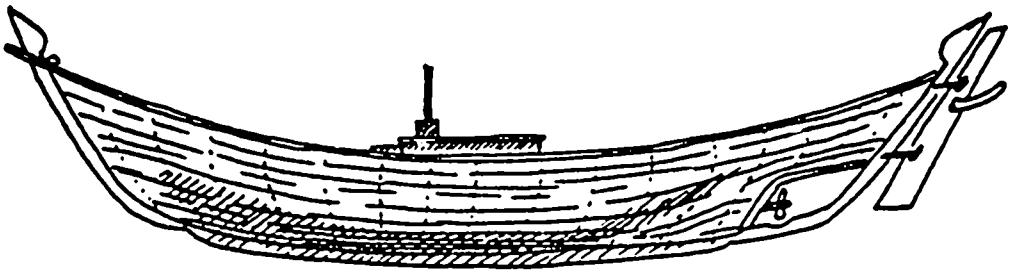
FIGURE 9: Drawing of Large Plan-Built "Hūrī"

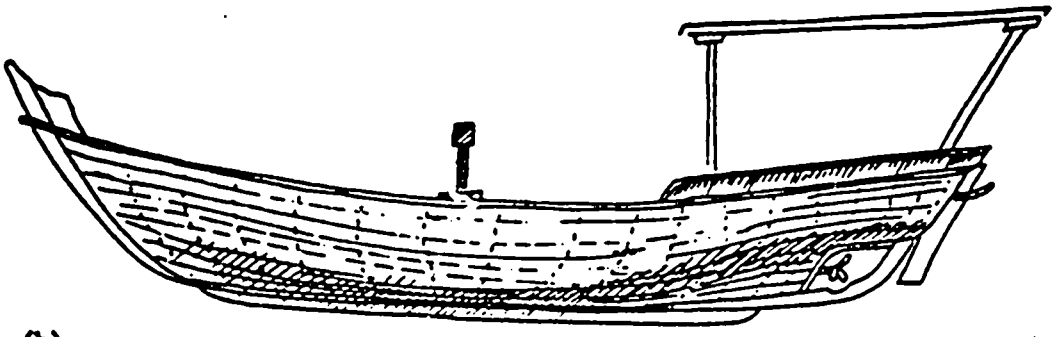


From: Durham University, 1978. Research and Development Surveys in Northern Oman, Final Report. Volume V. "Fishing and fish marketing."

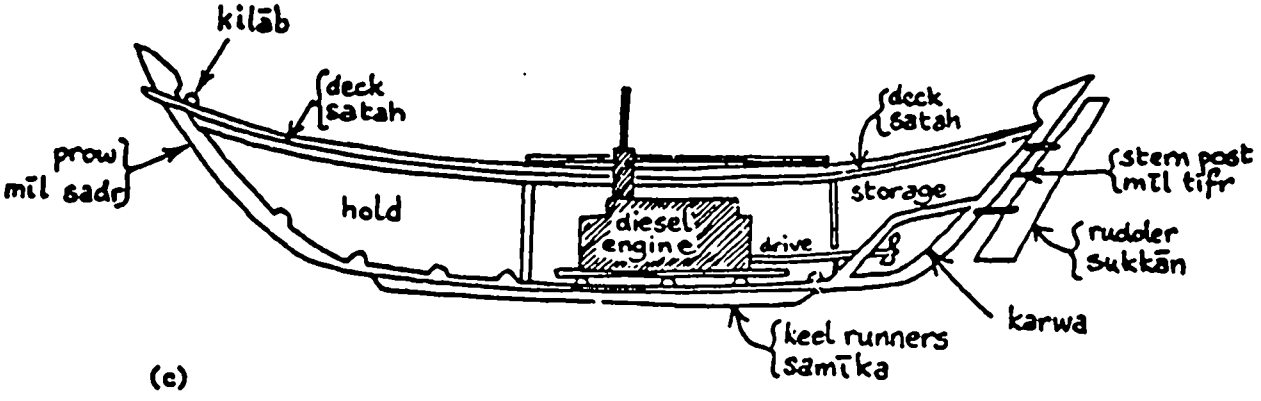
FIGURE 10: The Large Plank Built Vessels



(a)



(b)



(c)

(a) large "hūrī" or "lānsh"
(b) shu'i.
(c) vertical cross section of large "hūrī".

From: Durham University, 1978. Research and Development Surveys in Northern Oman, Final Report. Volume V. "Fishing and fish marketing."

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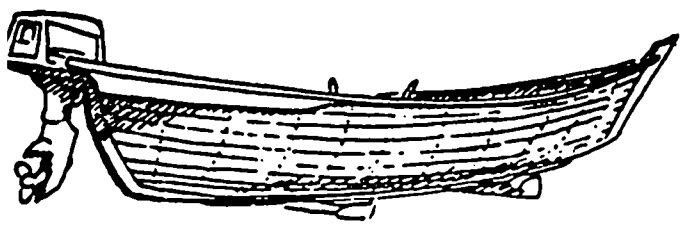
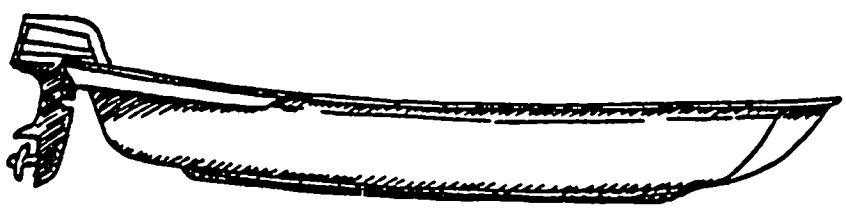
FIGURE 11



A small plank-built "hūrī"



A dugout hūrī

From: Durham University, 1978. Research and Development Surveys in Northern Oman, Final Report. Volume V. "Fishing and fish marketing."

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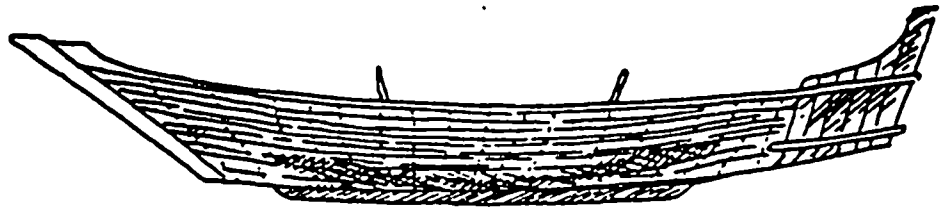
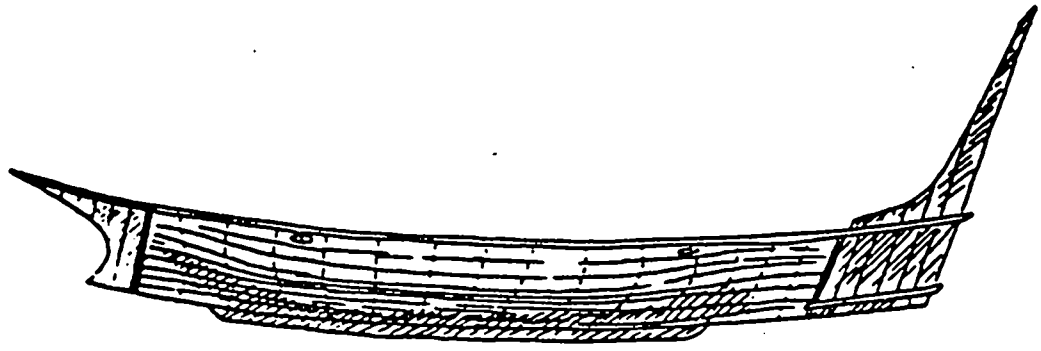
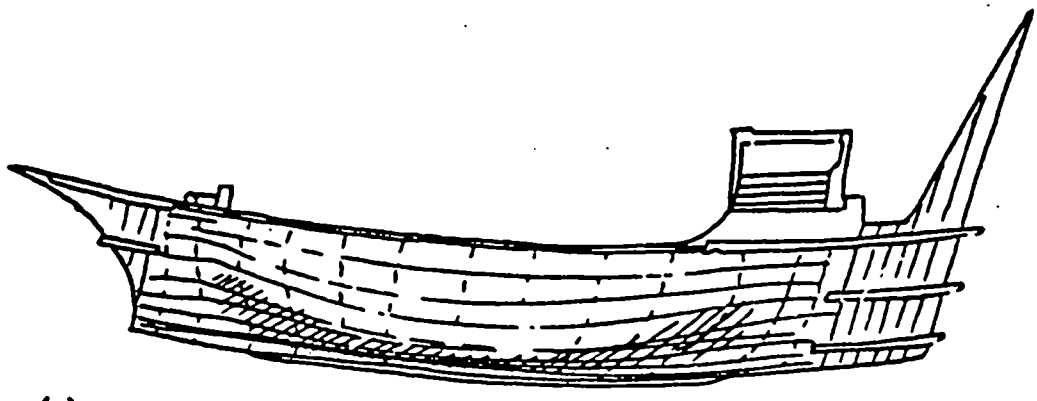
FIGURE 12



(a)



(b)



(c)

(a) The shāhūf or baqāra of the Batina
(b) The fishing badan of the Batina
(c) A transport badan, found near Suwayq

From: Durham University, 1978. Research and Development Surveys in Northern Oman, Final Report. Volume V. "Fishing and fish marketing."

83.1

> familiar with inboard diesel engines exists on the Bātina - that is, one man to service and repair a total of probably 250 or more inboard engines spread out along more than 150 km of the Bātina from east of Suwayq to north of Shinās. In many villages can be found a man who is able to carry out small-scale repairs, but his expertise will not always be available since he carries out repairs as a favour rather than for profit. The mechanics at garages on the main Bātina road are skilled in land vehicle engines, not the types used by fishermen, and in any case the garage proprietors are not at all willing to involve themselves with the problems of the fishermen (Ibid:80).

Both parts and service for outboards are more readily available in Matrah, although it is not always easy to transport a motor from a remote settlement to the capital area, then wait several days for the work to be done. Currently some engines and spare parts have been distributed as a subsidy of Fisheries and then through the Agriculture Bank (Birks: personal communication). Nevertheless, one wonders whether mobile parts and repair shops would not find a receptive clientele in the region. Undoubtedly the most major single problem facing fishermen with motors is that of repairing and servicing (Ibid:85).

2. The Fishermen. Birks (1976, 1978) attributes the decline of pastoralism in Norther Oman to the attractions of wage labor in other parts of the Gulf. According to the Durham University studies, whole almost 40 percent of the fishermen do work outside Oman in any given year, about 90 percent of these remain fishermen. Only 7 of the 92 migrants identified find non-fishing employment. The others find work as captains or as crew members on boats, mainly in Bahrain, where they remain for varying periods of less than six months at a time. The preferred season for migration is from late September to December, when the Gulf runs of kingfish, tuna, and bonito are plentiful. Some fishermen migrate in the summertime for shrimping. Thus, fishing, whether at home or abroad, is the prime occupation of the majority; a very small number derive any significant income from other occupations (Durham Report V. 1978:89-90).

The share system, so common among fishermen in Europe and the Middle East, also operates in Oman. Except for those who fish alone, or with a close member of their household, their compensation is a function of the value of the total marketed catch. In the case of jārūf (beach seining), the earnings are divided one-third for the boat, net, and owner, and two-thirds for the team. This latter is divided into one share for each person who hauls the net and a double share for each oarsman. It appears that poor people, without access to a larger boat, supplement their earnings by joining these teams, although it is not clear if, as is the case in some Caribbean fishing communities, any member of the community or, indeed, any passerby, may help haul in the nets and thereby qualify for a share.

For the other boat crews, there is a variety of share arrangements. "With so many different systems in operation it is difficult to generalize about income per man" (Ibid:103). We suspect, though it remains to be demonstrated with field data, that the arrangements are subject to some negotiation among the owner, the captain (if he is not also the owner), and the crew. A particularly successful captain, or a particularly hard-working crew, may be able to negotiate a more favorable distribution of the shares. Since the Durham University data were derived mainly from questionnaires, the operation of such negotiations, documented from ethnographic studies of fishermen in other parts of the world, cannot be detailed here.

A study team summarizes its report on the fishermen as follows:

1. About half the fishermen on the Bātina are also to some extent cultivators, though in few cases are their gardens more important to them than fishing.

55x

2. Over one-third...work seasonally in one or another of the Gulf States... Nearly all who go do so to fish.

3. A large number of fishermen are not economically self-supporting units, since they are assisted financially from either their own or their relatives' work elsewhere...

4. The total annual costs of a diesel fishing craft are estimated to be on average RO 1,000; those of a petrol craft RO 700, and those those of a shāsh fisherman RO 70.

5. A conservative estimate of the total capital invested in craft and fishing tackle on the Bātina is at present just over RO 1 million. Replacement costs and running costs together total over RO 600,000 per year.

6. The average net annual income from local fishing for a fisherman working on a motorized craft...is estimated to be between RO 30 and RO 40 per month plus another RO 10 to RO 20 worth (notional value) of fresh fish per month, in addition to any supplement from beach seining. For shāsh fishermen who do not work on motorized boats the average net income is probably around half these figures.

7. The present number of fishermen on the Bātina is probably around 3,500. This figure is considerably lower than any previous estimate (Ibid:107).

As noted earlier, no information is given on the social and sexual division of labor in fishing communities, on the roles of children or the aged.

3. Marketing and Handling of Fish. The major problem in provisioning fish to the consumption centers of Oman is not one of sufficient production but rather sufficient distribution. Along the densely populated Batina demand exceeds supply, and there are few surpluses large enough to be exported to other areas. The southeastern coast, on the other hand, has far higher yields in relation to the size of the population, and it is from this area that dried fish are transported to more populous areas. Thus Batina fishermen face no difficulty in disposing of their catch, and a little of that finds its way inland. The links between fishermen and ultimate consumer are few,

rarely involving more than two intermediaries (Ibid:117). Much of the catch is consumed in the settlement of the fisherman himself, and no intermediary is involved in the exchange.

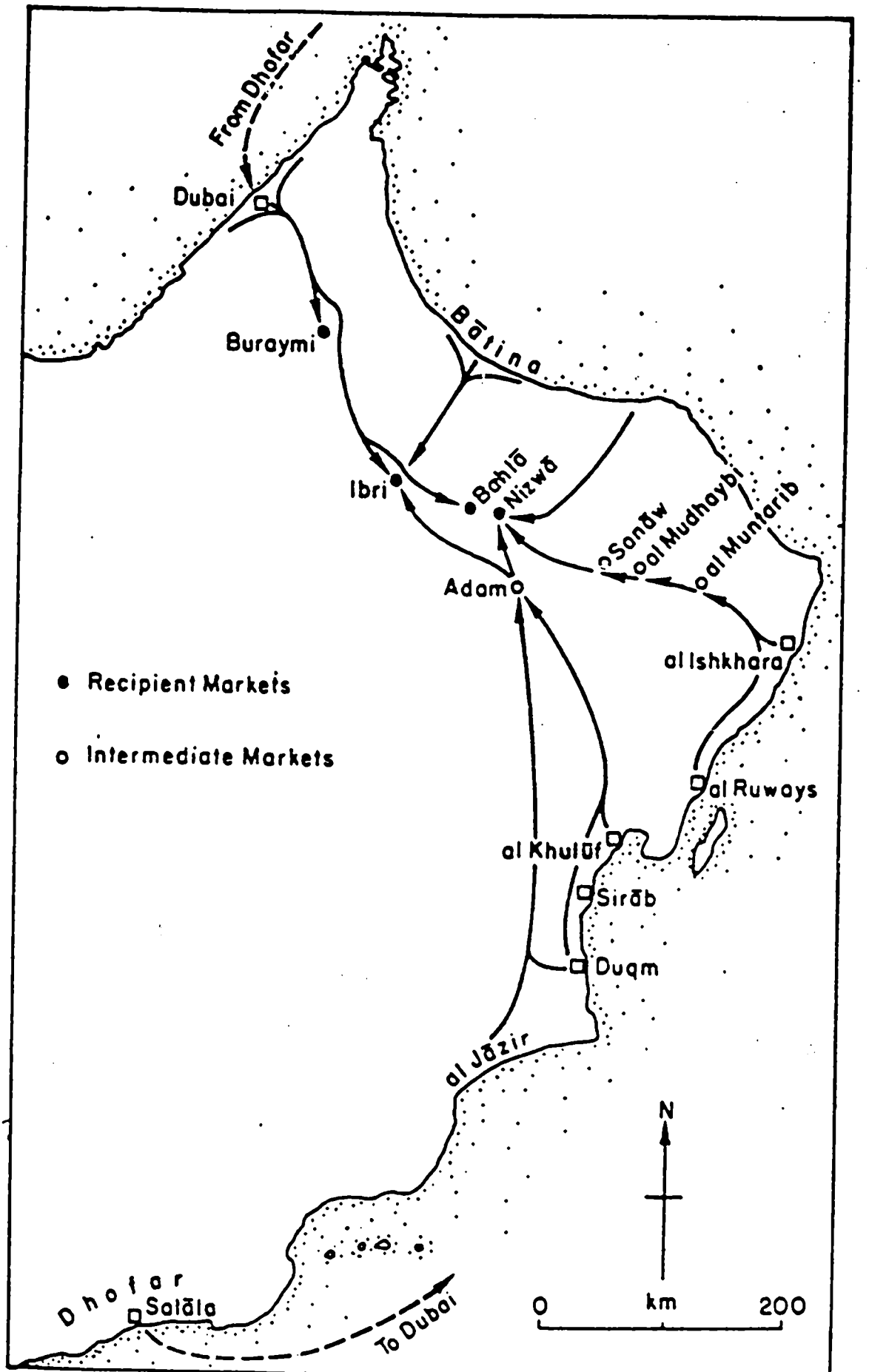
> Assuming a large enough catch, a fisherman will generally sell at the closest sūq. If fishing with a motor-powered craft, he will usually go straight from the fishing ground to the sūq and after the catch has been sold will return coastwise to his village. Non-motorised craft...will generally return from fishing to the fishing settlement, and then bring such fish as are intended for sale to the sūq along the beach on foot or by donkey (Ibid:119).

The extent of the marketing area is about 10 km on either side of the sūq. Those settlements more remote from the markets either consume their fish locally or transfer it to locally-based or itinerant traders (qammāt, pl. qamāmīt). At the larger suqs, traders retail the fish to local consumers and, if there is any left after the market closes, cure the remainder with salt or sun, where it then is transported for sale in the Interior.

Most of the cured fish sold in inland markets originates along the south-east coasts from Ras al Hadd to Dhofar. Fishermen in this region spend the summer tending their date gardens, so the bulk of the catch comes mainly in the winter months. The traditional routes from the coast to the Interior are marked on Figure 13. The trip which used to take 10 days by donkey or camel is now made in a pickup truck in about 24 hours. Further, the number of intermediaries has been reduced as tribal associations with specific regions no longer impede movement across ethnic territories as they once did. Thus the minor sūqs along the road between the coast and large Interior settlements like Ibri have experienced a marked decline in activity.

Trucks and the relative ease of movement since 1970 have led to the introduction of fresh fish in the Interior; "...it was soon found that the people of the Interior when given the chance liked fresh fish quite as much as the

FIGURE 13: Fish Supply to the Interior



From: Durham University, 1978. Research and Development Surveys in Northern Oman, Final Report. Volume V. "Fishing and fish marketing."

coastal populations. Indeed, they have been prepared to pay almost double the price for it" (Ibid:131). Much of the fresh fish sold in the Interior comes from the U.A.E. and Dubai, where ice-making facilities are found. (The first ice plant in Oman was built in late 1976.) Even fresh fish from the southeastern coastal sections of Oman is transported in ice from Dubai.

The Durham team summarizes its findings on marketing as follows:

1. Of the 100 or more species of edible fish found on the Bātina coast, only a few are regularly caught in large quantities. Most are highly variable in their abundance.

2. The annual quantity of fish sold in Khābūra sūq over the period 1975-76 is estimated at around 200 tonnes.

3. The total annual catch for the whole Bātina cannot on present estimates be put at more than about 10,000 tonnes. Of this probably 25% to 50% is sold through the Bātina sūqs.

4. For at least the last five years catches on the Bātina have been smaller than previously, and fish surpluses have been small and localised. The Interior of Oman has been served with fish principally from sources other than the Bātina

5. Until the early 1970s cured fish (mostly dried shark, dried sardines and anchovies, and salted kingfish (kan'ad) was the only fish available in the Interior.

6. The main sources of dried shark and salted kingfish in recent years have been the south-east coasts of Oman. Dried sardines and anchovies reach the Interior also from Dhofar (via Dubai) and occasionally from the Bātina.

7. Since about 1973-74, motor transport has enabled fresh fish to be sold in the Interior.

8. Fresh fish (iced) sold in Ibri in the period 1975-76 originated mainly from the UAE. Over the same period the Bātina was replaced as the second most important source by the south-east coasts, despite the fact that until late 1976 the only source of ice was the UAE (Ibid:137).

TABLE 3

List of fishing terms in use on the Bātina coast of Omat

Nets

	name of net or net system	plural (s) (where known)	observations
	general name for net:		
ليخ	laykh	layākh	applied to all nets except castnets
	castnets		
شبكة	shabka	shabak, shabkāt	
غلّ	ghall	ghallāt, ghulūl, aghlāl	
سالية	sālya	-āt	
	seines		
جاروف	jārūf		beach seine
ضغو	dhaghw		
ضاغية	dhāghya		offshore seines
تحويط	tahwīt		
فاروة	fāruwa		encircling net used without boat
	gillnets		
منصب	mansab	manāsib	fixed
منصب رفع	mansab rafʿ		"
طوالي	tawālī, tawwālī	-āt	fixed or drift
هيال ، هيالي	hayyāl, hayyālī	hayāyīl, -āt	" " "
دوّاري	dawwārī	-āt	fixed(1)
دقّة	diqqa, diqqī	-āt, daqaq	fixed or drift
سيني	sīnī	sayānī	fixed
قصقوصي	qasqūsī	-āt	fixed or drift(2)
بربري	barbarī	-āt	fixed(3)
ليخ طباق	laykh tabāq	layākh t.	fixed(4)
طريقي	turayqi	-āt	

(1) fixed, but able to revolve around anchor pivot at one end

(2) from qasqūs, small shark

(3) from barbar, Rhynchobatidae

(4) from tabāq, local generic name for ray

From: Durham University, Research and Development Surveys in Northern Oman, Final Report. Volume V., "Fishing and Fish marketing," 1978, pp. 151-158.

	name of net or system	plural (s) (where known)	observations
	Other equipment:		
	traps		
دوباية	dūbāya	dawābī	large traps
جرجور	jarjūr	jarājīr	large traps
بيمة	bīma	bayām	smaller traps
	lines		
خيط	khayṯ	khuyūṯ	handlines
حدق، هداق	ḫadaq (ḫadāq?)		handlines
حلقة	ḫalqa		
شكة	shakka		types of longline
	fittings for nets		
شطان	shiṯān		ropes attaching net to anchor
شغي(؟)	shaghay(?)		
مدّ	madd		reeving rope
بوه	būh		(polystyrene) float
باورة	bāwara	-āt	anchors
انجر	anjar		
	also:		
شد، مشد	shadd or mishadd	shudūd	old nets, tree branches, etc. sunk with traps to attract fish
هالي، هابي	hālī or hābī	hawālī or hawābī	old nets, tree branches, etc. sunk with traps to attract fish
	plank-built craft		
بدن	badan	-āt, badāna, badādīn	
شاهوف	shāhūf	shawāhīf	
بقارة	baqqāra		
شوعي	shū'ī	shawā'ī	
هوري عود	hūrī 'ūd		
عاملة	* 'āmla		
لانش	* lānsh		
ماشوة	* māshuwa		
	other craft		
شاشة	shāsha	shāsh, shāshāt, shūsh	palm-frond craft
هوري	hūrī	hawārī	dugout canoes
ابوغادوف	abū ghādūf		dugout canoes

*names not greatly used on the Bāṭina coast proper

List of names of fish in use on the Batina coast of Oman

Generally speaking, the collective form is given.

n.f.i. = not further identified.

عندق	'andaq	Nemipterus tolu & Argyrops spinifer
عندق ابو ريشي	'andaq abū rīshī	Nemipterus tolu
عندق ستّين	'andaq sittīn	Argyrops spinifer
عندق ام رويشي	'andaq umm ruwayshī	Nemipterus tolu
انفلوس	anfalūs	Coryphaena hippurus
عنفوف	'anfūf	n.f.i.(loc.wd. for "bat")
عنز	'anuz or 'anz	n.f.i.; poss. Tetradontidae
عروس	'arūs	n.f.i.; poss. alt. for sha'rī?
باعيل	bā'īl	Carangidae (?Scomberoides)
بلاص	balāṣ	Cynoglossus spp.
برعم	bar'am	alt. for bā'īl
بربر	barbar	Rhinobatidae, incl. Rhynchobatus djeddensis
بربرخوري	barbar khawrī	Rhinobatidae
برّية	barrīya[1]	Stolephorus spp.
بياح	bayāḥ	alt. for dū'
بدح	bidaḥ	Gerres filamentosus, or Leiognathus fasciatus
بكّي، بكة	bikī or bika	Carangidae
برطام	burṭām	n.f.i.
ديب (دئب)	dhīb (dhi'b)	type of shark
ضلع	dhil'	Carangidae
دبسي	dibsī	Caranx sp.
ديك	dīk	alt. for kawfar
دياو، دجاجو	diyāyū (dijājū)	Carangidae
دوع	dū'	Mugilidae
فرانكي	farānkī	alt. for kawfar
فرس	faras	Chirocentrus dorab
فيرس، فرس	fayrs or furs	see ṭabāq
فرش	fursh	alt. for khannāy
غلية	ghalya	young of Sphyraena spp.
غزوان	ghazwān	n.f.i.
غرارة	ghurāra	Hemirhamphus marginatus
غريبية	ghuraybīya	Carangidae
غربي	ghurbī	Carangidae

(1) See note at end of list

حلوايو	halwāyū	Formio niger
حمام	hamām	appl. to several spp incl. Nemipterus sp. & Caranx spp.
حمراء، حمر	hamrā' or hammar	Lutjanus spp.
هامور	hāmūr	Cephalopholis spp. & Epinephelus spp.
حقيبة	haqība	n.f.i.
حاروش	hārūsh	alt. for sha'ri
هياس	hayyās	n.f.i.; poss. type of shark
حبس، حبص	hibs or hibs	Chorinemus lysan
حدي	hidī	Pseudupeneus sp.
عاص	'ils(1)	young or jarjūr
عماد	'imād	Platax orbicularis
إسفيروة	isfayruwa	n.f.i.
جداد	jadād	see qadād
جدّ	jadd	see qadd
جفاع	jafā'	see tabāq
جمل	jamal	Triacanthidae
جرنشوع	jaranshū'	n.f.i.
جرجور	jarjūr	generic name for shark
جرجور ابو كراز	jarjūr abū kirāz	Sphyrna zygaena
جرجور ابو قرن	jarjūr abū qarn	Sphyrna zygaena
جواف	jawwāf	Hilsa ilisha
جيذر	jaydhar	Larger of Thunnidae, incl. Thunnus albacores
جمجام	jimjām	Theraporidae. Helotes sexlineatus
جولان	jūlān	Carangidae
جوران	jūrān	alt. for shuwayjī
كعب	ka'b	n.f.i.
كبش	kabsh	Psettodes erumei
كاهل	kāhil	n.f.i.
كنعد	kan'ad	Scomberomorus commersoni
كانتي	kāntī	n.f.i.
كاردوس	kārdūs	n.f.i.; poss. alt. for sha'rī
كاسر ملة	kāsir milla	n.f.i.
كوفر	kawfar	Argyrops spinifer
خنّ	khann	Arius spp.
خناي	khannāy	prob. Plectorhynchidae
خرخور	kharkhūr	Belonidae
خود	khawd	see tabāq
خوري	khawrī	see barbar
خيّاط	khayyāt	Alectis indicus

(1) See note at end of list

خباط	khubāt or khubbāt	young of kan'ad
خمار	khumār	n.f.i.
كرّ	kurr	Gaterin sp.
لاصف	lāsif	Trichiuridae
ليلية	layliya	Carangidae
لزاق	lizzāq	Echeneis naucrates
لصف	lusuf	alt. for qābit
معيزو	ma'ayzū	Lothrinidae
مجدع	majda'	alt. for medium-sized kan'ad
ملزم	malzam	Siganidae
مرن	marn	see tabāq
مشب	mishib	Heniochus acuminatus
مشط	mishat or misht	Ephippidae
مران	murān	alt. for ghurāra
نموه	nammūh	n.f.i.
نيسر	naysir	Lutjanus spp. incl. L. vaigiensis
قابط	qābit	Acanthopagrus berda
قداد ، جداد	qadād or jadād	alt. for qadd
قدّ ، جدّ	qadd or jadd	Sphyraena spp.
قلمبيص	qalambīs	n.f.i.
قندويح	qandwayh	Sphyraena spp.
قندويح مكراني	qandwayh makrānī	Sphyraena sp.
قصم	qasm	Carangidae
قصقوص	qasqūs (1)	young of jarjūr
قفدار	qufdār	Caranx sp.
قروش	qurūsh mināwara	poss. type of anchovy
رابض، ربض	rābidh or rabadh	see tabāq
صداء	sadā'	Euthynnus affinis
صافي	sāfī	Siganus sp.
صفصوف	safsūf	n.f.i.
ساهوك	sāhūk	poss. young of barbar
سهوة	sahwa	Thunnus albacores
صال	sāl	Carangidae
سلسول	salsūl	Istiophoridae incl. Istiophorus gladius
سنّور	sannūr	Stegostoma fasciatum
سيافة	sayyāfa	Pristidae
شعم	sha'm	Sparidae
شنجوح	shanjūh	Synodontidae
شعري	sha'rī	Lethrinidae
شاص	shās	Platycephalus indicus

(1) See note at end of list

شوبري	shawbarī or shūbrī	see tabāq
شيمبوه	shaymbuwa	?Bothidae
شماهي	shimāhī	Scianidae
شجار	shujār	poss. Lutjanidae
شويجي	shuwayjī	?Scolopsis sp.
سجندان	sijindān	n.f.i.
سكل	sikl	Rachycentron canadensis
سلس، سليس	sils or sulays	alt. for ghurāra
صيم	sīm	?Caesio sp.,or poss. Rastrelliger kanagurta
سمان	simān or simmān	Cephalopholis spp. and Epinephelus spp.
سين	sīn	young of hibs
صبور	subūr	alt. for jawwāf
سولي	sūlī	Lethrinus spp.
سوام	suwām	n.f.i.; poss. Carangidae
طباق	tabāq	generic name for ray
طباق فيرس، فرس	tabāq fayrs or furs	type of ray
طباق جفاع	tabāq jafa'	" " "
طباق خرد	tabāq khawd	" " "
طباق مرن	tabāq marn	" " "
طباق رابض، ربض	tabāq rābidh or rabadh	" " "
طباق أمّ القرون	tabāq umm al-qurūn	" " "
طباق أمّ خويط	tabāq umm khuwayt	" " "
طلاح	tulāh	Trachinotus blochii
طريجو، طريقو	turayjū or turayqū	n.f.i.; poss. alt. for bidah
عوم، عومة	'ūm or 'ūma	Sardinella spp.
أمّ القرون	umm al-qurūn	see tabāq
أمّ خويط	umm khuwayt	see tabāq
عقوم	'uqūm	n.f.i.; poss. young of khann
زريدي	zuraydī	Caringidae; poss. young of tulāh?

Other sea creatures:

ربيان	rubyān	shrimp
غيلم	ghaylam	turtle
سافع	sāfi'	crayfish
عوج، عوق	'ūj or 'ūq	cuttlefish
دوك	dūk	cockle

Notes:

Young shark and cured shark: Both on the Bātina coast and in the Interior 'uwāl عوال is the general name for cured (i.e. lightly salted and sundried) shark. In the Interior nearly all the 'uwāl on sale is cured young shark, which is there called qasqūs قصقوص ; fresh young shark is known in the Interior as 'ils علص . On the Bātina, however, qasqūs is invariably fresh young shark.

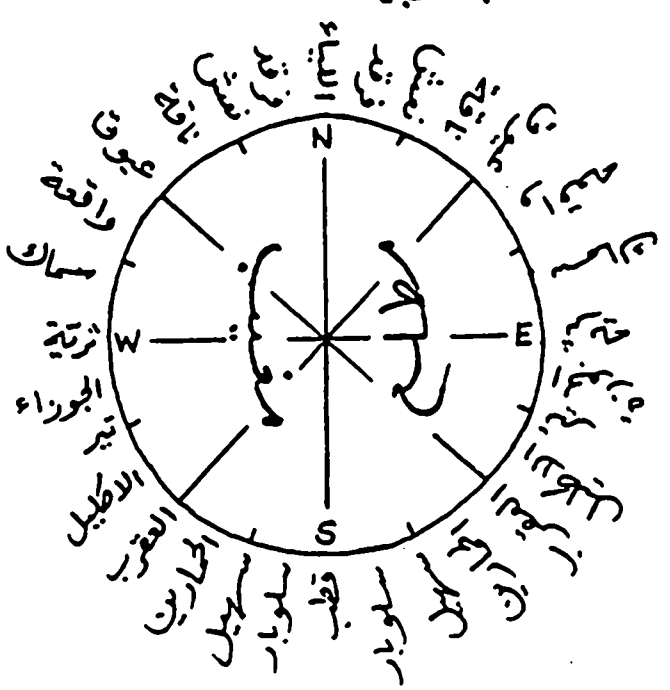
In sum,

'uwāl	=	cured shark both on the Bātina and in the Interior.
qasqūs	=	in the Interior: cured young shark.
		on the Batina : fresh young shark.
'ils	=	in the Interior: fresh young shark
		on the Batina : occasionally used for fresh young shark.

Dried anchovies: Live or fresh anchovies are called barriya برتية . When dried they take the name qāshi' قاشع .

Stars used for night navigation by fishermen on the Bāṭina:

Points of compass Rising/Setting مطلع	مغيب		Name of Star	Comments
-	N	-	لياء، اللياء (al-)layā'	North Pole star
			فرقد furqid	cf: الفرقدان = Ursa Minor/ β & γ
NNE		NNW	نعش na'sh	cf: بنات نعش in Ursa Minor
			ناقة nāqa	
NE		NW	عيوق 'ayyūq	Capella
			واقعة wāqi'a	
			سماك simāk	cf: السماكان
E		W	ثريّة thurayya	Pleiades
			الجوزة al-jawza	= الجوزاء Gemini
ESE		WSW	تير tīr	
			اكليل، الاكليل (al-)aklīl	
SE		SW	العقرب al-'aqrab	Scorpio
			الحمارين al-ḫimārayn	
SSE		SSW	سهيل suhayl	Canopus
			سلبار، سلوبار silubār or silūbār	
-	S	-	قطب quṭub	= القُطْب الجنوبي



A fisherman using e.g. maṭla' na'sh to steer to the fishing ground would follow maghīb suhayl to return to land.

VILLAGE SOCIAL STRUCTURE

Many of the most current articles written about contemporary village life in Oman concentrate on factors of modernization as catalysts of change and the developing village crisis throughout Oman. These works will be discussed below in a section dealing with these and related topics. Prior to introducing the complexities of social, economic and technological change, the essentials of village social structure will be outlined. The sources for this are few for the literature is concentrated upon the predominant dual foci of water management and the problems of villages in transition. The fundamental social structure and institutions of an Omani village have not attracted research attention beyond their overt relevance to other topics.

Some data on villages as functioning social units are to be found in Barth (1978); Birks and Letts (1976); Bonnenfant and Le Cour Grandmaison (1977); and Wilkinson (1974, 1977, 1980). Two articles which more directly address aspects of village organization include Bonnenfant and Harthi (1977) and Le Cour Grandmaison (1977). The social and economic relationships between full-time or predominantly full-time pastoralists and village social structure is discussed intermittently in a few sources: Birks (1976, 1978, 1978a); Cordes and Scholz (1980); and Wilkinson (1977).

1. History of Village Settlement in Oman. The development of village settlement in Oman has followed a cyclical pattern of conflict and compromise between the economic structure of Omani irrigation systems, on the one hand, and tribal values and Ibadhi religious ideology, on the other. Wilkinson's most far reaching analysis of Omani society (1977) is a diachronic study which carefully integrates aspects of history, Islamic law, political ideology,

economy, settlement patterns, ecology and tribal social structure. A summary of Wilkinson's conclusions regarding the dynamics of village oasis development will be reviewed here.

Wilkinson has described Omani village settlement as an on-going process whereby desert tribes, from the time of the arabization of Southeast Arabia, have periodically taken advantage of a weak or collapsed Ibadhi state and settled in villages. The villagers of mixed Persian and Arab tribal descent usually constituted the lower class while their new rulers would assume or monopolize, for a time at least, shares in vital resources. In time the newer ruling tribe would be replaced by another influx of desert pastoralist seeking to claim village lands in times of Ibadhi or local weakness or unrest.

These periodic incursions were successful because of a major contradiction between the organization of resources and both religious and political authority. The Ibadhi state or Imamate was a religious institution recognized and respected by the Muslim native population of Oman, although in varying degrees in different regions. Wilkinson asserts that the Ibadhi state was weaker in Northern Oman. While this religious authority provided firm moral and ethical principles, these very principles of democracy limited taxation, minimized civil administration and mitigated against strong centralized government, state revenues, development and investment. There were few periods in Omani history when the Ibadhi Imamate could provide security and public funds for investment. This greatly affected the irrigation settlements where development was more a factor of local investment and cooperation in irrigation management, local politics and regional alliances than of state policies.

The tribal ethic and system of organization which still characterize Omani villages also was not always compatible with the cooperative demands of the

irrigation facilities. The nomadic tribal peoples maintain an egalitarian ethic. Although they have an institution of tribal leadership through the elite families, the authority of the role of tribal shaykh has usually been limited to arbitration of disputes and decisions regarding war or peace with another tribe. As a representative, judge or war leader the shaykh stood above the other tribesmen and commanded respect as long as he could demonstrate skills in negotiating and decision-making.

With the sedentarization of tribes in agricultural villages, wealth differentiation based upon access or claim to the factors of production (land, labor and water) led to some measure of social stratification both between the newcomers and the "client" villages and within the tribal structure itself. Thus not all tribesmen would receive equal shares of vital resources and a variety of agricultural occupation classes developed.[13]

The fact that many settlements were and are today bi-tribal or multi-tribal is manifest in the settlement patterns and architecture. Settlements often consist of two ore more walled defensive units each with a falaj or channel of a falaj. Within the major defensible tribal compounds, sub-tribal units are represented in fortified haras or neighborhoods. Although conflict between settlements was a constant threat and frequent reality, intra-settlement conflict could and did erupt as well. Various tribal disputes, often invoking water rights, could set off open hostilities in which the irrigation systems themselves were often the object of destruction. There is an action which is undertaken only

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[13] Omani shaykhs, particularly prior to the last decade were not involved in the labor migration movement. They seldom needed to find work, although some did go abroad. Their incomes from villages were considerable and, when insufficient, even minor shaykhs could derive a comfortable living by prevailing upon those with whome treaties had been arranged (Birks and Sinclair 1977:61). But the relationships between shakhys with village interests and village economics seems most clearly evidenced in the northern area of inner Oman where the villages are not under control of the Ibadhi state.

100X

after an informal but elaborate code of escalation is enacted. Only then are the underground galleries tampered with (Birks: personal communication). Although exposed and vulnerable irrigation channels are easily destroyed by attack, they can be repaired only after much labor and financial investment.

In many ways both the structure of the Imamate government and the tribal villages have stood in opposition to the needs of the falaj organized communities, and thus against the foundations of agricultural communities. Strict Ibadhi religious ethics which discouraged a centralized or administrative government and lack investment resources together with the Arab tribesmen's inheritance of these capital intensive irrigation systems (which had originated and flourished under a highly centralized, investment wealthy Persian administration) led to the periodic breakdown of the agricultural communities as viable production units. There were periods of relative peace and under strong, wealthy and pious local rulers some towns actually expanded their aflaj and bayt al mal (public treasury holdings) lands. Generally, however, those aspects of tribalism which have inhibited, and at times even destroyed agricultural growth explain much about Oman's history, the insular and defense character of its communities and the overall pattern of settlement.

2. The Occupational Structure and Division of Labor within the Omani Village and their Relationship to Social Structure.

a. Agricultural Occupations.

i. Large landowners (singular hanqari; wealthy man, landlord) in a village are those who own enough land to be market gardeners and derive a comfortable income from marketing that portion of their date harvest and seasonal crops not necessary for household consumption or ear-marked for other use. If their wealth increases, these landowners might continue to invest in shares of

land and water, construct their own personal wells, put money into a waqf trust for the construction of a mosque or other public facility or invest in enterprises outside of their village (i.e., assist a relative in business in an urban center, send a relative to school, etc.). The landowners usually rent or lease land, with or without (usually without) water shares, to sharecroppers who may receive a percentage of the harvest. They also have drawn heavily on the labor market by hiring workers for duties related to (1) seasonal work at harvest time, and (2) periodic maintenance of the falaj channels belonging to the landlord. In some instances wealthy landowners were propertyless villagers who emigrated and after working abroad returned with sufficient capital to invest in land. This was particularly characteristic of the Sharqiya region, many of whose residents went to East Africa.

ii. Lesser landowners may meet yearly subsistence needs with the entire family working the family land as a single production unit, often including married sons. More typically, however, a household head owns a less than subsistence level share in land. Such households may work their land and bid at regular auctions for the necessary water, but the men of the household will hire out as laborers in much the same manner as the landless classes of agricultural workers. Optimally they will hire out on a regular basis to larger landowners, but if demand is low and unemployment high, which is often the case (Barth 1978), they will be hired on a daily basis and receive daily wages. Seasonal labor at harvest time is usually available. At other times of the year men have worked simply in exchange for coffee and meals, but with the shortages of rural labor which prevail in the Interior this labor force may be becoming more expensive to employ (Birks: personal communication).

iii. The bayadir (singular bidar) are a group of agricultural laborers who engage in a specific specialized type of agricultural labor, referred to as badara duties. Wilkinson's research into the origins of this "class" led him to conclude that the bayadir are the contemporary representatives of the pre-Arab Persian agricultural villagers (Wilkinson 1974). His hypothesis states that these people were assimilated into Arab tribal structure but to a different degree in different parts of Oman. In central Ibadhi Oman, bayadir enjoy status as tribesmen with all of the implied rights and obligations. In this area, they often own land. In northern Oman where new tribes have arrived more recently than in central Oman, the assimilation is less complete and a bidar is not considered a social equal but usually is treated as a client, mawla (Ibid). Regardless of the region, bayadir are an occupational class with circumscribed agricultural duties, although the particular tasks associated with them may vary from one area to the next. Furthermore, there is no barrier to a bidar engaging in agricultural work on his own plot or in other non-agricultural employment. But the specific specialist badara duties are closely confined to irrigation and care of palms. Typically the bidar pollenates the female flowers, binds the bunches of dates as they ripen, cuts dates ready for harvest and irrigates the palm garden. The bidar often works simultaneously for several landowners who may also contract him to carry out duties not specific to bayadir occupations. These may include ploughing under the palms, irrigating and tending seasonal crops, or falaj maintenance. Traditionally this work was paid from a percentage of the crop, but this has changed at least in Ibra and Bahala where, according to Le Cour Grandmaison (1977) and Barth (1978), the agricultural labor markets are completely monetarized.

The Omani villages are self-sufficient for most of the year but have traditionally relied upon the availability of extra-seasonal labor, both local and migrant. Migrant labor has been attracted to the villages at harvest time from among: (1) the nomadic populations of Oman's desert interior; (2) the shawawi of the Bajada; and (3) the fishing villages near the coast. These seasonal laborers were traditionally paid by the percentage of the crop though perhaps now they receive wages as suggested by Barth and Le Cour Grandmaison. Local seasonal workers, dawwas, are hired specifically for threshing tasks and they traditionally have received 1/10th of the grain and access to as much of the chaff as they desired. In addition to this fixed schedule of payment they have received benefits on the annual Muslim feast day. As a service to the village, the dawwas may be expected to reciprocate by performing chores such as digging graves when necessary.

Ex-slaves and descendents of slaves perform various agricultural duties as well, but are not a specialized occupational class. As unskilled laborers they may be hired to work on construction or aflaj maintenance in addition to garden work.

According to Barth's case study of Bahala, this labor market of small landowners who are part-time agricultural workers and full-time agricultural laborers without land is large. These workers must compete on the labor market in order to meet household costs. Short notice and short term work is eagerly accepted, a reflection of the lack of employment opportunities in general (Barth 1978:62).

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b. Non-Agricultural Labor ('Awamr - falaj specialists). Virtually all of the falaj specialists are members of the 'Awamr tribe. The heart of their area, dar is in the Sharqiya region with their capital located at Qala'at al 'Awamr, near Izki. The aflaj workers form teams of relatives which tend to work within a specific region of Oman circulating among a network of villages according to demand. Thus a village often hires the same team -- indeed they may request a specific team to return for work when needed. These teams also have particular relationships or agreements with specific tribes. Through these tribal arrangements a tribe can have its needs treated with higher priority as the 'Awamr respond to its needs in each village. Because they perform high risk work which villagers are unskilled at and fearful of attempting, their piece rate wages are higher than most villagers daily income. The 'Awamr falaj workers are almost continuously absent from their villages or homes of origin. When the stress of underground excavation tires them, they may remain in a village after their contract is completed and work temporarily at sharecropping. Their distribution within Omani villages is restricted to aflaj settlements. The wells of the Batina Coast do not require their special skills so local labor is hired in that area, usually Baluch workers who receive daily wages for their work (Birks and Letts 1976:93).

c. Craft Production. Market organization and village craft production are topics which receive only minimal attention in the literature. The major exception is Barth's (1978) commentary on the social significance of craft production in Bahla. Although Bahla may not be typical, a description based on Barth's work and supplemented by that of Le Cour Grandmaison provides an outline of the social hierarchy of non-agricultural production. The market,

and in the past, fortification as well, is the heart and center of the Omani village.[14] It may, as in Mudayrib, be situated near the mout of a falaj. Yet despite its significance and prominent location the market is not as highly developed an institution as elsewhere in the Middle East. For example, in village market places there are few permanent shops or professional tradesmen although the general trend in village markets in Oman is toward greater growth. This is exemplified at Bahla where prior to 1965 all trade was part-time work engaged in by cultivators. Trade by auction characterized the market, sūq, and was most active around noon during the hottest hours of the day.

Auctioneers (singular: dallal) are usually ex-slaves who auctioneer as part-time professionals hired by falaj companies or persons selling commodities. Traditionally, they were the only real professional class within the market organization except for a few shopkeepers.

Although few in number, craftsmen in Bahla form a greater percentage of the town population than craftsmen in most other large Omani settlements (Barth 1978:63). Craft production falls generally within two social groupings, those which are "clean" and those which are "unclean". These classes of crafts may be reflected in the spatial organization of the community, for the unclean crafts are often peripheral to the

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[14] As most villages are factionalized and all are organized on the hara or quarter system, there is often no one single community mosque. Multiple mosques patronized by families or clans are typical of village settlement. But like much of the Arab world, there is a main mosque serving as a religious institutional focus which is in the town center. New institutions such as police stations, hospitals, schools, etc., may be outside the settlement, as at Ibra (Le Cour Grandmaison 1977) or on its periphery, as at Mudayrib (Bonnenfant and Harthi 1977).

village.[15] Occupational specialization tends to follow descent lines and strong social stigma is associated with the unclean crafts which are engaged in by persons of the lowest social standing, often ex-slave groups.

Barth's survey shows that Bahla's clean crafts employ most of the persons involved in craft production, 100 craftsmen and their families. These persons are employed in three silversmith enterprises and seven potteries. Although disdained by some, weaving is basically considered a clean craft. There are 30 weavers and family members who work at businesses which in total posses 12 looms. Recruitment for this occupation has been strictly associated with family descent and all of the weavers are members of 1 of 8 tribes. Professions such as falaj and well construction, masonry, and carpentry are usually part-time and although not considered crafts they are clean professions. Barth estimates that of a population of 8,000, 200 persons are employed by these unstigmatized occupations. The specifically tainted crafts of Bahla include smithing, tanning and dyeing.

d. The Bayasirah. Another occupational class is the bayasirah. Wilkinson's research on the history of their role in Omani society has demonstrated that they may be the original inhabitants of Oman. As such they seem to have predated both the Persian and Arab occupations of the region (Wilkinson 1974). Their integrity as a contemporary identifiable social group, despite the centuries of contact with other populations in Oman, is confir-

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[15] This distinction between crafts which are tainted and those which are more respectable has characterized much of Middle Eastern commercial life from the Middle Ages to the present. The unclean crafts are usually those which are offensive to Muslim ethics: money lending, or those which pollute or otherwise create an unpleasant appearance in the community such as tannaries, butcheries and metal smiths. These crafts are still found on the periphery of many large Middle Eastern cities and towns.

mation of the fact that they were never accepted into the wider Persian society, or later into tribal Arab society. The Persian descendent badayir were fictionally introduced into Arab tribal geneologies and given full social status. Wilkinson's theory is that the excluded bayasirah clans were original inhabitants neglected by the Persians and Arabs on the basis of pre-Islamic racial or class barriers. These pre-Islamic barriers probably rose from the fact that in the eyes of others the bayasirah had no asl (origin) or known racial origins. Bayasirah as a stigmatized group are neither free nor slaves. In short while not accepted as having any clear origin and hence constituting an outcast group, they also could not legitimately be slaves since they are Muslims. It seems clear, however, that they were treated like slaves for much of their history and attached as client clans to various Arab groups.

The bayasir form a servant class and perform servant household functions for the upper class Arab households to which they are clients. Their duties are those of slaves and include domestic tasks and shopping in the sūq. In any assembly of free men they occupy the seats which are lowest in social status.

e. Administrative Offices. There are three classes of administrators in an Omani village: private, religious and state appointed. The private administrative class is associated with the operation of falaj companies. These offices have been described above in detail, but a few additional points will be discussed here. Some of the falaj occupations, such as keeper of the falaj book and 'arif (water supervisor), tend to be hereditary. They require above average skills including literacy and expertise in the measurement of time. These are positions of trust, at times built upon generations

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of honesty and honor within the families employed. The wakil's position seems to be more administrative, and although it is a job which clearly requires skill, the process of selection of personnel for such an office is not clear except that they are often chosen from among tribal groups which do not share in the holdings of that particular falaj. This is to ensure impartial judgment in falaj water distribution.

Similarly, the Imam or other religious head of the community selects administrators to manage property, water shares or other holdings which are put into waqf. The criteria of selection of these people may or may not be the same as that employed by the falaj company. This point is not discussed in the literature.

Government administrators who ruled local settlements as their personal principalities in traditional pre-modern Omani society were called hakim (ruler). These rulers varied from devout religious leaders to self-appointed strong men with personal armies. Beyond their own village fortification walls they had loose or vague alliances with nearby nomadic groups or regionally elected Imam. It seems that settlements were often managed as personal estates of the hakim, but there was probably at least a nominal distinction between bayt al mal (state treasury funds accrued through the collection of zakat, the Muslim tax) and the property of the hakim. In principle, management of the Islamic state funds would be the primary responsibility of the local ruler, but in the absence of a strong central government the quality of such management certainly varied depending on the personal qualities of the leader.

Since 1959 and the political consolidation of the Sultanate of Muscat and Oman over the interior region, the central government appoints regional governors (walis) in large towns such as Bahla (Barth 1978:54). The government also appoints a qadi al quda or chief religious judge as well as the tax collector which is the third central government regulated office. The extent to which these officers in the centralized village administration appoint assistants to related offices is an important question. It seems that there may be offices locally appointed to deal with areas of defense and military, market regulation and bayt al mal administration. But following the principles of wakil appointment in falaj companies the three principle government selected civil and religious administrators will not be chosen from among principal tribal factions which reside in any particular village. The government also employs members of the askriya or civilian guard to serve in village communities, though for the same reasons these persons are seldom appointed to their villages of residence or origin.

The central government recently introduced facilities within village settlements which require administration beyond the traditional administrative framework. To what extent the presence of schools, clinics, hospitals, police stations and other modern institutions introduce new administrators from outside the community is another important question. Le Cour Grandmaison in her discussion of Ibra refers to "employees of the local police or foreign companies" as local persons from the village (1977:100). Status and pay scales associated with such non-manual labor positions should be investigated, as well as the impact of any non-local administrators, teachers, medical

personnel, etc. upon the social fabric of the community.[16]

f. Summary. In summarizing the factors which shape the occupational structure of the Omani village, agriculture emerges as the most significant and, similar to craft production, overtly stratified. Agriculture has traditionally been an honorable and desirable occupation. As the mainstay of village viability and individual household subsistence, the majority of the male inhabitants engage in full or part-time agricultural work. Wealth, gained through inheritance or skill, determines which households have access to water and land and how much they own (although land is more easily obtained through the market than water, shares of which are seldom offered for sale). Upward mobility characterizes the agricultural occupations since landless bayadir and the less powerful clans in local politics are not excluded from the water or land markets. However, most agricultural laborers, and particularly the lowest ex-slave and bayasir classes, never achieve the necessary wealth to participate in the economy as landowners. Nor do they achieve recognition through acquiring specialist skills which allow them status as agricultural specialists classes. As Wilkinson (1974) notes, there are instances of bayasir who succeed to high positions in non-agricultural pursuits, including one chief Qadi of Muscat. They have also been known to acquire members in the semi-artisan class.

The crafts are usually practices by members of a limited number of tribes. Barth asserts that while not all members of a particular group of tribes are

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16 Instances for a wide range of village communities throughout the Middle East demonstrate that such outsiders without local family ties are very often not incorporated into the village social structure but remain outsiders, albeit with occupational status.

weavers, all weavers are recognized and publically accepted as members of these tribes. The undesirable professions which include those of auctioneer, domestic servant, tanner, dyer or smith are practiced only by ex-salves, or other lower classes, such as the instance of bayasir who function as servants for their patrons illustrates. There seems to be little or no occupational mobility among the lower classes.

As will be discussed below, the entire agricultural status of many Omani villages is in a crisis situation. Other occupational opportunities are emerging, although they are mostly outside the village communities. Educational facilities are also more numerous today than 20 years ago and the acquisition of education is presently the best vehicle for social mobility. Who has access to educational facilities is a major question for determining the extent to which persons of the lower classes have improved their occupational mobility.

The question of who constitutes the administrative classes in Oman is critical to an understanding of social mobility. While a few families retain trusted positions in falaj administration from one generation to the next, this is only a part of the administrative personnel within the falaj corporation. Regarding other matters little is known. Historically it appears that the hakim surrounded himself with his own entourage of family and allied client status clans who constituted his personal body guard. But the contemporary administrative system now is government regulated and more complex in many villages than previous was the case. Certainly the administrative structure has potential for mobility, but before that is assessed an understanding of who the administrators are is essential.

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3. The Relationship of Pastoralists to Village Economy and Social Structure. The Bajada zone is environmentally suitable for both pastoral and agricultural subsistence strategies. The latter is dependent upon adequate water management. Farther to the west the desert fringe provides sustenance suitable only for hardy camel breeding nomad populations. The Bajada is a transitional frontier zone where agriculturalists and small livestock pastoralists share resources and benefit from one another. Livestock are kept by all groups, hadar -- the settled villagers, the shawawi -- mobile pastoralists who engage in some agriculture, and the bedu -- camel nomads who subsist entirely upon their herds and items acquired through trade and purchase. Although all of these groups have been affected by new opportunities for wage labor (though not all tribes within each category), an understanding of the historic pattern of interaction between them is warranted.

In summer months, the time of the harvest when the frontier of pasture and water shrinks to the oases environments at the foot of the mountain belt of inner Oman, the bedu and shawawi both from the lowlands and the mountains usually congregate near villages. Rights to land usage are legally designated in concentric rings which expand outward from the village proper. The first belt is the grazing land which immediately surrounds the village and which the village residents control together as communal property; haram, hudad, or sawadir al bilad. The next zone is mar'a (plural mara'i) or land recognized as the grazing area for shawawi or bedu groups. In some cases villagers may try to establish rights of usage in this zone. In the summer or harvest season when pastoralists settle near those communities with which they have political ties or alliances, they have access to abandoned fields and other village grazing lands.

Aside from this traditional nomadic pattern of horizontal migration, other more complex relationships between pastoralists and agriculturalists may develop. From a historical perspective, Wilkinson (1977:190-194) has outlined some of the transitional relationships that develop between bedu and hadar peoples when the former are in the process of sedentarization. Since the Bajada zone can more easily accommodate nomadic pastoralists and provide a rich pasturage, this has presented a historical "pull" factor. For nomads with wealth, the oasis communities provide an additional attraction in that they offer the opportunity for diversification of investment.[17] At various times in Omani history pastoral groups took advantage of weak political control among the sedentary populations and settled in villages. Outlying villages were particularly susceptible to nomadic incursions (Wilkinson 1977:119), but the typical pattern has been that of local agriculturalists not being evicted but absorbed either as (1) mawla -- peoples with client status; or through (2) geneological assimilation (with the notable exception of the bayasir).

The Duru tribe (or, specifically, a subsection of the Duru) provides an excellent example of a pattern of change in the role of pastoralists in village life. These people emerged as a separate social entity at the end of the eighteenth century. During the time of Wilkinson's research, the Duru co-occupied a large desert dar north and west of the al Wahiba tribe and south

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[17] Unfortunately, little is known of the population dynamics which could, along with temporary climatic cycles, present a "push" factor incouraging sedentarization.

of the present day United Arab Emirates.[18] They camped during the summer months at Ibri and Adam, two focal points within their area of tribal grazing or dar. Ibri served as their principal market center and Adam as a strategic post, although they were also present in smaller surrounding communities. In these communities Duru tribesmen have purchased land and water rights and in Ibri they came to own one-third of the date palms (1965). This constituted a larger holding than any one particular fully resident tribal group could claim. Some of the smaller villages the Duru owned outright. At Ibri they sold livestock and acquired necessities and were available for providing transportation services between settlements as well as for mercenary employment.

Despite their ownership of land and water in these agricultural communities and their right to camp within the villages, the Duru continued their seasonal movements of livestock. None of the Duru maintained permanent residence in the village. Rather than cultivate their palms, they would contract bayadir to manage their investments. The repercussions of the Duru's complex commercial relationship with these permanent settlements were: (1) increased contact with the central government in which the Duru are in a potentially vulnerable position; (2) changes in the role of the shaykh based on land holding and investment patterns; and (3) increased social stratification which has widened the gap between rich and poor.

Another example, the Bani Qitab, also underscores the dynamic relationship between pastoralists and sedentary agricultural peoples. This is a

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[18] Wilkinson's initial work on the subject: "Arab settlement in Oman: The origins and development of the tribal pattern and its relationship to the Imamate", an unpublished D. Phil. thesis, Oxford, was completed in 1969. He cites 1965 as a date when some of the data regarding the Duru was collected.

further demonstration of the ongoing processes of sedentarization which still characterizes some Omani communities. In the case of the Bani Qitab, the role of tribalism in village social structure as well as the whole phenomena of "tribal villages" in Oman is aptly documented.

In the mid-18th century the Bani Qitab moved into the lower Dhahira and began to purchase holdings in settlements owned by an allied tribe. Taking advantage of political instability they gained full ownership of Aflaj, a settlement north of Ibri. The Bani Qitab chose to settle year-round in permanent dwellings within the village and half of them engaged in agriculture while the other half continued to herd livestock. Their herd movements were reduced to the region surrounding the village so that their gardens could be tended to while they managed their stock. Their herding strategy no longer followed a nomadic, seasonal schedule. Both internal and external changes in tribal structure occurred; alliances with other groups became locally structured and local lineages were assimilated by the Bani Qitab which altered the clan structure.

These cases of pastoral groups in transition illustrate part of the range of potential dynamics of village social structure as well as the tribal origin of sedentary communities. The more common form of hadar contact with pastoralists is through sharing of facilities and mutually beneficial exchange through the village markets -- a relationship which does not necessarily result in full sedentarization of the pastoralists. Birks (1976, 1978, and 1978a) in his studies of the shawawi, includes data regarding the role of these pastoralist groups in village society. His discussions include analysis of mountain shawawi, lowland shawawi, and mountain shawawi responses to drought.

The mountain shawawi move their camp frequently but only in short distances. They often utilize the same water sources throughout the year. As they are responsible for preventing their herds from damaging village crops, they usually remain outside of the villages which are situated on the mountain fringes and major wadis. They do, however, supplement their livestock produce and income with agricultural produce. Most of them manage scattered patches of palms or own palms in larger settlements on a seasonal basis. About one-quarter of the shawawi own village trees, although they do not irrigate or care for these orchards themselves. Bayadir are hired to maintain the trees for either a cash or crop percentage. But in many cases yield is lower than the potential of the garden since the bayadir are often neglectful of shawawi palms.

Despite the... own holdings of either mountain wadi or village date palms, most shawawi for subsistence purposes must purchase large quantities of dates annually. Shawawi are thus not self sufficient and, in fact, are incapable of maintaining a closed economy. There is a substantial cash flow between these mountain herders and the larger villages which have a date surpluses. The markets of the villages, both commodity and labor, are essential to shawawi in ways other than that of merely obtaining surplus dates. For example, at village markets the shawawi engage in the following: (1) marketing livestock and dairy products; (2) marketing firewood and honey which they collect in the mountains; (3) they act as agents of transport between settlements; (4) they are employed as mercenaries supporting village factions; and (5) they purchase dates, fodder, tea and sugar.

The lowland shawawi of the Dhahira studied by Birks tend to be client (mawla) populations attached to the shaykhs of local sedentary communities. Because of the factors which limit the availability of water resources in the lowlands, the shawawi cluster in groups in proximity to their allied villages. They are often dependent upon the village aflaj and therefore usually camp upstream from the village. Another factor in their settlement pattern is the availability of deserted farmland. They seek these areas because they yield high quality pasturage. At harvest time nearly all lowland shawawi will be situated on the fringes of oasis settlements. In addition to providing seasonal labor the village offers dependable water supplies at the time (dry season) when it is most needed by the pastoralists. Shawawi who own cattle must always maintain close contact with villages in order to obtain alfalfa daily. Because of the risks of crop damage, the shawawi of the lowland must herd their animals more carefully in these settled areas. While devoting more labor to herd management, the shawawi ironically own fewer palms in the villages and thus have less agricultural income than the mountain shawawi. Thos who do have rights to date palms usually cultivate them with their own labor. Regardless of ownership almost all lowland shawawi purchase dates for fodder because of scarce pasture. Some household supplies of dates are supplemented by gifts of dates from: (1) shaykhs in return for political debts; or (2) villagers whose goats are tended by the shawawi. In the case of the latter, cash arrangements exist but date gifts are a traditional feature of local trade.

The lowland Dhahira shawawi have recently experiened high percentages of absenteeism among males between the ages of 14 and 40. For the most part, these

men have joined the migrant labor movements and have taken cash jobs along the coastal urban centers. Cash remittances have contributed to the complete monetization of the shawawi economy. The absence of critical labor has promoted the decline of herd size in the Dhahira, the quality of husbandry, and water facilities (wells which required maintenance). In addition, group decision-making suffers from the loss of leadership. Thus the mountain pastoralists still have sufficient size herds to provide meat for the villages, but out-migration which is also increasing in the mountains may jeopardize this in the near future. Further constraints on increased livestock marketing to villages is created by a substantial decline in herd size among the nomadic Duru.

How have these changes affected the relationship between the shawawi and the villages with which they politically and commercially interact is an important question. Birks gives a few insights into the complexities of the current trend, but for the most part the processes which are the focus of this paper are not evident from the literature. Cash remittances which are received by the mountain shawawi from wage labor are funneled into the traditional economy. Dates or fodder crops may be purchased in order to maintain the herd. Nevertheless, the pattern of seasonal movement shows a growing concern for human convenience (the proximity of roads and other modern facilities) the the disregard of the herd. These new stock patterns are often to the detriment of the herd.

Birks' (1978a) case study of drought in an area of mountain shawawi demonstrates that even with the changes cited above the shawawi economy remains dependent upon the economy of the villages in times of ecological stress. The cash income of the shawawi derives not only from out-migration

to the urban centers but also from the villages. The mountain shawawi market livestock and its produce and locally gathered resources at village markets, as well as provide services as mercenaries and agents of transportation. This cash income, for the most part, flows into the village economy during drought. The specifics of this process are the outcome of a complex process of decision-making and risk judgment. The alternatives which the pastoralist may select include: (1) increasing fodder for his herd through purchase, assuming it is available from villages; and (2) selling goats. In the latter option, the goats are usually those with only minimal chance of survival. Villagers, however, are reluctant to purchase drought affected livestock, particularly if, in the first instance, they are older or less hardy animals. Because the mountain villagers usually do not wish to increase their household livestock during a drought, the shawawi often sell these animals to the more distant lowland markets;[19] (3) large-scale hand feeding of goats, usually with surplus dates, in an attempt to maintain a high quality herd, a very costly alternative; or (4) mortgage of rights to the harvest crop from whatever date palms the herdsman might own in order to obtain cash for imported fodder (Birks 1978a).[20] Regardless of the combinations or sequences of alternatives chosen, the pastoralist is an integral aspect of village economy.

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[19] Drought is often regionally specific in Oman, affecting perhaps just one wadi region. Thus unaffected villages can absorb extra livestock as well as provide pastoralists with surplus dates and fodder.

[20] Other alternatives which are labor intensive but not dependent upon the village economy are: (1) increased efforts in husbandry care per animal; and (2) movement out of the traditional political territory to avoid the drought area and its consequences.

The lowland shawawi now maintain very small flocks from which they derive little economic benefit. It is reported that today they consume more packaged meat and purchased milk than products which obtain from their own herds (Birks 1976:13). As they are no longer functional pastoralists and have adopted a totally monetarized economy based on remittance from family wage laborers, their relationship to the village economy has altered. Their diet appears to be more market dependent than previously the case, but details are not presently available.

The shawawi and the villagers participate actively in the same areal framework for which the village is the nucleous. Both food commodities and labor are exchanged or circulated between the villages and shawawi populations. The shawawi differ from the bedu in their relationship to the villages in that "first, they are more or less incorporated into the tribal structures of the settled people, second, they have peculiar rights in the village with which they associate, and third, they act as the main long distance transporters of goods between the settled communities" (Wilkinson 1977:63). The latter point, one which was also raised earlier in the paper, indicates a function more critical than merely that of shawawi economic participation in the village market. Until motorized transportation and tarmac roads came into use facilitating the flow of information and goods, the shawawi movements between oases served to bind these nucleated settlements into an exchange economy based upon a regional network. Mobility has always played a critical role in oases settlement (Wilkinson 1978) and this service has formed links between the shawawi and the hadar as well as integrating the economies of diverse settlements.

The fully nomadic bedu traditionally grazed their camels within large tracts of the desert fringe. These drier areas are unfit for small livestock. The dar of the bedu tribe is usually quite large due to ecological circumstances, since the poverty of pasture was supplemented by quantity for which large ranges are imperative. In the summer months they moved toward the villages of the Bajada. The extent and nature of their economic relationships with the settled communities is not documented in the available literature. It seems, however, that political ties, sometimes strong but at times vague, encourage the bedu to maintain seasonal contact with specific villages and inner Bajada grazing ranges. Indeed many bedu tribes have settled sections with which they are still associated and some may return to these communities.

In earlier sections, two cases of pastoral nomadic integration within village life were discussed, the Duru and Bani Qitab.[21] These examples illustrate the complexity of village-nomad relationships and the tribal origins and nature of village life in the pre-modern period. Both of these tribes have been commented upon recently by writers who focus upon the affects of modernization upon these nomadic and semi-nomadic peoples. Their comments are useful for comparison of the historical accounts cited by Wilkinson in order to scale recent changes in the bedu upon village social structure (Birks 1978 and Cordes and Scholz 1980).

In his discussion of the Duru, Scholz describes recent changes affecting Omani nomad tribes in general. According to his work, the bedu now spend the entire year camped near oasis settlements or by roads which enable easy accessibility to villages. They maintain semi-permanent camps, usually within

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[21] Only small sections of these tribes are represented in the examples.

an hour's reach of a settlement. Contact with village facilities, notably schools, hospitals and clinics is by Landrover. Their camps include cement block houses which "are supplied with electricity and have air conditioning, refrigerators, televisions and deep freezes" (Cordes and Scholz 1980:55).

The specific status of those Duru members who purchased water and land shares in Ibri, Adam and other communities is not discussed. But it seems that they may have settled in these villages. Oil wealth now characterizes the Duru life style, for the oil fields of Oman are located within their dar. Some of the Duru have taken advantage of their new wealth by settling in wadi beds near the mountains of the Bajada and have planted date gardens.[22] These enterprises, the establishment of gardens and wells, are expensive and often ill-planned. Poor soil and salinity already have forced the abandonment of some of these gardens.

The trend is for settlement to be near oases, particularly the oases of Tanam and Awaifi. They are also not far from the sites where earlier investments led some Duru tribesmen to increase ties with the villages. The Duru seem to participate in village life in several ways: (1) they probably maintain some shares in the village of Ibri, Adam, etc., where their original investments were, despite the development of their new farms; (2) they actively take advantage of village facilities which have only recently become available in Interior Oman; and (3) it can be assumed that they are active in the village centered market system.

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[22] Any migration which still occurs is occasional and by motorized transport.

Birks, on the basis of a study of Wadi Jufrah (1978), interprets the Bani Qitab current life-style as transitional between the bedu and shawawi (although some are fully sedentary agriculturalists at the settlement of Aflaj). They move seasonally within a much smaller dar than previously and in summer they camp within a few kilometers of the date gardens of a few oasis settlements. At these oases, they actively participate in the date harvest. Some households, however, remain in a fixed location throughout the year at the periphery of the village. Similar to the shawawi migrant members of the tribe working at wage labor, they send remittances to help support the family herd. Also like the recent economic pattern of the shawawi, cash income has become the focus of the household economy and in many families herds are no longer maintained. Families that continue to pasture animals away from the villages utilize motor transport to make daily visits to village date gardens. This occurs during harvest time so that they might work for a landowner and/or cultivate their own harvests. In this fasion, dates and other village goods can be brought to the campsite without the necessity of the family camping at the village site.

Despite the degree to which a tribe is bedu or shawawi, settled or mobile, owners of shares in the village gardens or engaging in a cash economy, the village is the focal point of their economic activity.

4. The Family and Household Economy within the Village.

a. The Tribal Structure. The villages of Oman are based upon principles of tribal organization. Relationships among family members and the wider social arena of the village reflect the tribal model. The influence of

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tribal values upon the villages is perpetuated by (1) interaction with non-village tribal groups (bedu and shawawi); and (2) the spatial distribution of social units within the village. The tribe is an entity which in theory serves to: (1) resolve internal disputes among members; (2) engage in offensive and defensive military operations; (3) recognize as its leader one member called a shaykh; and (4) control a dar or territory. Tribal society in Oman is the foundation of territorial, economic and family relationships among groups. Yet the clan, al or yal, is the integrating factor of the tribal structure. The clan is usually the largest relevant unit of identification and action and its members are bound to each other through mutual obligations which are legitimized by their claims of common descent.

Following Wilkinson's model, several different concepts of family are recognized simultaneously, each related to the notion of clan and with different implications for obligations among members (Wilkinson 1977:156-161).

i. The legal family (or minimal descent group). This group consists of that portion of the clan which is patrilineally related through descent from a grandfather. This group functions as a legal body in cases of blood guilt or blood revenge which arise over homicides.

ii. The immediate family. This is a subset of the legal family. Consisting of closely related male relatives, sons, brothers, father and paternal uncles, it makes decisions concerning acceptance or rejection of settlement terms in local cases involving homicide.

iii. The extended family group. A subset of the clan which claims a common ancestor; jadd (literally: grandfather). This group is larger than the legal family but offers similar mutual support for its members.

iv. The descent group. This is comprised of male descendents of an ancestor, jadd, who are obligated to each other regarding issues of revenge and defense. This group is often attributed with 'asabiya, a sense of unit among comrades. It is this group, often called fakhadh (plural fukhudh) which the individual most strongly identifies with. This is in spite of the fact that members often cannot trace, without omitting one or two generations, their geneology back to the jadd which they claim in common. This unit is a functional social entity which is an important factor in settlement patterns.

These groupings articulate the complex set of relations which any individual might have with a fellow clan member. This structure of obligations is usually associated with the pattern of loyalties. The conjugal family or bayt (literally: house) is not a feature of these categories since it is a residence group and not a legal kin group, although the term is used to denote kinship and/or residence.

The tribe is an agglomeration of clans which claim a common ancestor and act corporately in matters of defense and, in some cases, revenge. But just as families coalesce to act in the interests of the clan, the clans coalesce (theoretically), to act in the interests of the tribe. These units also fragment or fission along these same lines, especially at the level of clan or smaller family units. Alliances or hostilities are not the affairs of individuals but of the groups which the represent.

This normative model of tribal structure is not limited to Oman but is a feature of tribal social organization throughout parts of Africa and South West Asia. It is an ideal model because it is the social structure which tribesmen articulate as the basis for structuring obligations through a

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hierarchy of segments of cooperation. This segmentary lineage model cannot always be used for predicting how social alliances may actually develop given a real life situation. Dispersion of members of a clan or kin group encourages reliance upon local alliances. As will be shown below, geneological manipulation is often used to create the appropriate structural relationships which correspond to real situations where non-related groups or persons wish to formally recognize a mutually protective relationship.

A pivotal concept in the structure of tribal ideology then is the notion of descent and relatedness. In practice a tribe would have difficulty simply cooperating and interacting with true descent groups. Groups not only break away from their relations but they are also recruited into other descent groups. Geneological assimilation solves the problem of incorporating groups whose support is sought. It entails fictively introduced relationships which take on all of the rights and responsibilities required by the relationship. This manipualiton of geneology is an important factor in legitimizing joint group action.

Complementary to the notion of 'asabiya -- unity through mutual obligations derived from common descent -- is that of shaff. The latter refers to situations where geneological manipulation is not possible given specific structural obstacles. In such cases the members of each group treat each other "as if" ancestral linkages existed in whatever form desirable.

Leadership is vested in a shaykh who is a male with the appropriate leadership skills and from an appropriate family. He may be elected in the case of certain Omani bedu tribes, but sedentary tribes fill the office through a process of consultation (Wilkinson 1977:180). In either case peer

acceptance is critical. The extended family from which the shaykh is chosen is an elitist group which exercises the prerogatives of forwarding one of their own members for leadership in each successive opening of a position. This strategy depends upon the ability of the group to decide peacefully among themselves who that candidate will be. Hereditary succession from father to son is neither guaranteed nor often practiced, except in cases where the son is obviously more qualified than the other possible office holders. Normatively the sole criterion for selection among the appropriate men is the individual's ability to: (1) lead during war; and (2) mediate internal conflicts. Warfare is now much less a feature of Omani society than it was in the past. With increases in their contact with governments and in some cases oil income, new problems arise which require a spokesman and mediator to represent the interests of the tribe. It seems possible that the criteria for selection of a shaykh may be undergoing some change at present, or at least in the future when new problems may arise which are relevant to the integrity of the tribe. Aside from the duties for which the shaykh is appointed, he has in theory only the power of persuasion.

Many village settlements of Oman are multi-tribal. Social life within a tribal quarter, hara, or large village subsection, reflects this ethnic complexity. Relationships between haras may be: (1) hostile; (2) based upon alliance; or (3) cooperative shaff. Clans and other legal family groupings do not necessarily form residence units. Members may reside in different villages or engage in different forms of nomadic movement. Ties tend to solidify among groups according to proximity. Clan ties among members or units physically removed from one another are not as strong. Clan names may

lose all significance within their original tribe and the nisba or name; Bani Fulan (sons of so and so) may be grafted onto a new geneology and given a new set of obligations, a process frequently associated with sedentarization and adoption of village life. Most tribes are dispersed in a pattern which may range from claims of exclusive rights within a dar, to enclaves or haras within a mixed settlement to scattered families living far from the dar. The fluidity of affiliation accommodates the constant shifting and moving of tribal groups which has characterized Oman and enabled units to establish new bonds of political, economic, and social significance.

Conflicts of leadership may arise if no one group is clearly dominant over the entire village. In such cases different leaders may claim authority over the entire settlement. Political standoffs occur when major contenders gather available support from other groups creating a "neutralizing effect" in the settlement. This type of stalemate is most common when resources and mechanisms for their distribution are shared. Wilkinson (1977:233) has noted a geographic pattern of distribution of village conflict and cooperation. For example, mountain falaj settlements are isolated and logistical concerns force the inhabitants to consider the needs of the village above those of the tribe. In some areas regional associations and loyalties cross-cutting tribal ties have developed, as is implied in designations such as Jawf, Sharqiya, and Sirr, among others.

b. Household Economies. The majority of households within Omani villages engage in agricultural activities to one degree or another. Food production is a direct concern that regulates most household activities. All

households are required to secure food supplies for daily consumption. Where monetization of the labor market has replaced sharecropping, the primary diet staple, dates, must be purchased.[23]

The organization of gardens and priorities in distribution of water are indicative of the primary role which date palm cultivation plays in every traditional oasis society.[24] The base flow of a falaj is the daily quantity of water which is dependable. It is this flow that is allocated to the irrigation of date palms. No oasis can support more palms than can be sufficiently water by the base flow of its aflaj. Seasonally cultivated land, 'awabi (singular: 'abi),[25] is watered from wells or from aflaj flow which exceeds base flow volume. In the case of drought the gardener will abandon the 'awabi land and concentrate all available water on his tree crops which form the crucial investment. 'Awabi land is used for seasonal crops such as grains (wheat, barley, millet and sorghum) and vegetables (particularly onions, but tomatoes and corn are also planted). 'Awabi land is also used for fodder cultivation, commonly alfalfa is grown for household use or sale to pastoralists.

In addition to date palms, fruit trees are found in great variety. On the Jebel Akhdar plateau the fruit crops include pomegranates, grapes, peaches,

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[23] Although Barth asserts that in Bahla there is no local market for dates, it is clear that sharecropping in other areas has become monetized and that dates must be purchased by villagers, as they are by pastoralists (1978).

[24] The current transitions affecting oases settlements in Oman are not without their impact upon date cultivation. Details of this trend in the cultivation of dates will be presented later in the paper.

[25] This term is also applied to farm land which may be fallow.

apricots, figs, and mulberries. Limes are often planted between the date palms. Despite this variety, the principal crop is the date which is consumed locally in great quantity.

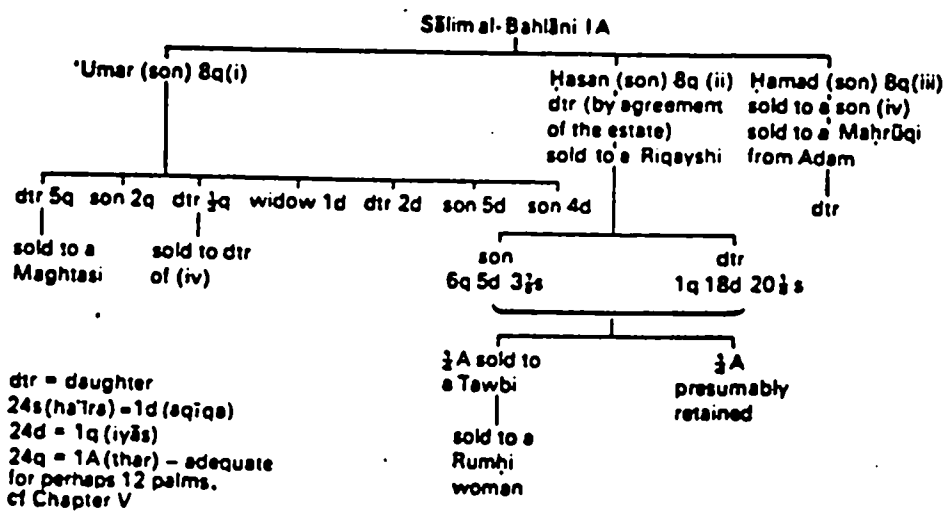
Animal husbandry supplements agricultural income and livestock frequent the villages. Most households keep small flocks or at least a few animals. These are usually sheep, goats and donkeys, although an occasional cow may be found. Livestock provide milk and dairy products for household consumption, and meat for feast occasions. Animals are also used for draught and transport and they provide woold and dung, the latter being used for fuel. Similar to date palms, livestock are a form of investment and a large number of animals in a particular household is a reflection of wealth. Villagers may hire local shawawi to tend their flocks for them.

c. The Family as a Unit of Production. The conjugal family forms the nucleus of the residence unit. Older relatives may reside in the household and children remain at home until they marry. Once married a daughter will leave her family. This however is often not far from the paternal residence and she may be married to a cousin or other male relative living in the hara. In the case of divorce, the woman returns to the house of her father, brother or maintains her own household within the family enclave. Sons marry and usually establish their own homes and households near their fathers'. This traditional pattern characterizes the domestic organization of production. The conjugal family is the core of production in which all of the sons participate (Le Cour Grandmaison 1977).

Studies of the sexual division of labor in the Omani household focus almost strictly on male roles, with little mention of women beyond their reproductive functions (Ibid). As the male's participation in the economy is overt and reflects male decision-making power over rights to land, water and other resources (which they usually undertake on behalf of their female dependents who may inherit shares) and since the division of labor is institutionalized in rigid norms concerning which work men and women can engage in in public, the male role has received far more attention. Wilkinson states that "within the falaj village community most agricultural and irrigation work is in the hands of the men. Women and children are entrusted with simple tasks like cutting jatt (alfalfa) or looking after the flocks of sheep and goats, but the serious work of irrigating and tending the palms is a man's job!" (1977:119). A similar statement appears in his earlier work (1974:37). This abrupt dismissal of the woman's role in agricultural production should not imply that women do not fulfill significant tasks in domestic production on a full daily basis. We simply know very little of the specifics of the sexual division of labor in Omani village society. The same can be said for children. Childhood is a period of socialization and training in work and responsibility for both boys and girls and these roles need further investigation. Some tasks and roles may be under-valued in society but this cannot be interpreted as their being of lesser or negligible significance in the structure of the domestic economy. As for Wilkinson's statement he is, at least in part, wrong. Barth points out that harvest season, besides involving much of the community, is a time of family cooperative agricultural work, "one can observe small family groups harvesting them (dates) cooperatively, younger men climbing the tall trees, women and children working on the ground below" (1978:57).

As mentioned earlier in the paper, some water shares in the falaj books are registered in the names of women shareholders. Since women do not accumulate wealth under normal circumstances, except in the form of jewelry (household shares in resources are managed by the male head) these shares are most often inherited as stipulated by Islamic law (Wilkinson 1977:114-5; see Figure 14).[26]

FIGURE 14
Changes in ownership of a water holding (taken from the Malki Falaj book)



It is often pointed out with regard to Islamic law that the practice of giving each sibling a share of inheritance insures that each descendent will have some measure of security, but without cooperation in the management of inheritance shares the benefits will be greatly reduced. Men, or more specifically, the head of the household in Oman, are formally recognized as the sole decision-makers with regard to family property managed as a unit (Le Cour Grandmaison 1977:104). It appears that participation on the part of women, sons and other family members in decision-making is greater than is formally

26 Wilkinson does cite historical records of women who have purchased their own falaj shares (1977:144-5).

recognized. This is a topic which needs study, particularly from the question of the management of female owned shares.

The domestic unit has been briefly described by Le Cour Grandmaison on the basis of her field research in Ibra, a town in the Sharqiya. She presents the dynamics of production from the perspective of overt male roles and broad generalizations. Her points are, however, useful and will be summarized here. The reader should recognize a few obvious contradictions with points mentioned earlier. The domestic production group consists of a man and his sons and all land and water rights in the family are owned by the father. The son's share in specific agricultural tasks and all of the produce is the property of the total family unit to be collected and distributed by the head of the household. This includes the allocation of resources or the payment of mahr or bride price for the marriage of his sons. After marriages sons continue to work their plots of family land. In cases where the son is a wage earner he will give a percentage of his wages to his father. He may also make purchases on behalf of the household and will receive a supply of dates for his own household.

The first marriages of both male and female offspring are carefully controlled regarding the selection of a spouse because "that (marriage) is the one which determines a definitive change of status, which is then not affected by subsequent marriages: of it are born the first children of the new line -- which, in a patriarchal system -- means the future heads of new lines" (Le Cour Grandmaison 1977:103). One does not marry "down" in a first marriage but a subsequent spouse for a male may be a wife from an inferior social status. General trends noted by Le Cour Grandmaison in village family life include:

(1) frequent endogamous marriage; (2) polygamous marriages are more common among men over 35 than younger; and (3) the occurrance of successive marriages. Among men of the Sharqiya divided polygamy occurs whereby one wife is resident in an individual native village and a second, African wife, is resident in Zanzibar. Other migrants from the Sharqiya to East Africa sent for marriageable cousins and established households abroad.

With the wave of male emigration from the Omani villages, some men have adopted a pattern of weekly migrations joining their families for only one day a week. Others leave for longer periods, depending upon how far they travel to work. Migrants working abroad or far from home may return to their villages only for the annual feast days of the Muslim calendar. Some men stay away for even longer periods. Statistics vary, but many villages are now limited in the number of able-bodied men between the ages of 15 and 40. This means that women often occupy a home alone or with their children, although invariably they live in an enclave surrounded by siblings or the supporting relatives of her husband. Le Cour Grandmaison cites an instance of an elderly poor woman who lived alone without kin to assist her. In this case her ex-slave status gave her a clear link to the community which provided for her needs. She in turn performed small chores for various households. Thus the extension of support among members of a hara or neighborhood may transcend family or clan ties and include individuals who come from groups attached to the dominant status groups either as clients or ex-slaves. Beyond this constellation of clear-cut relationships, however, there are no outsiders, i.e., non-clan, family or attached persons present in a hara.

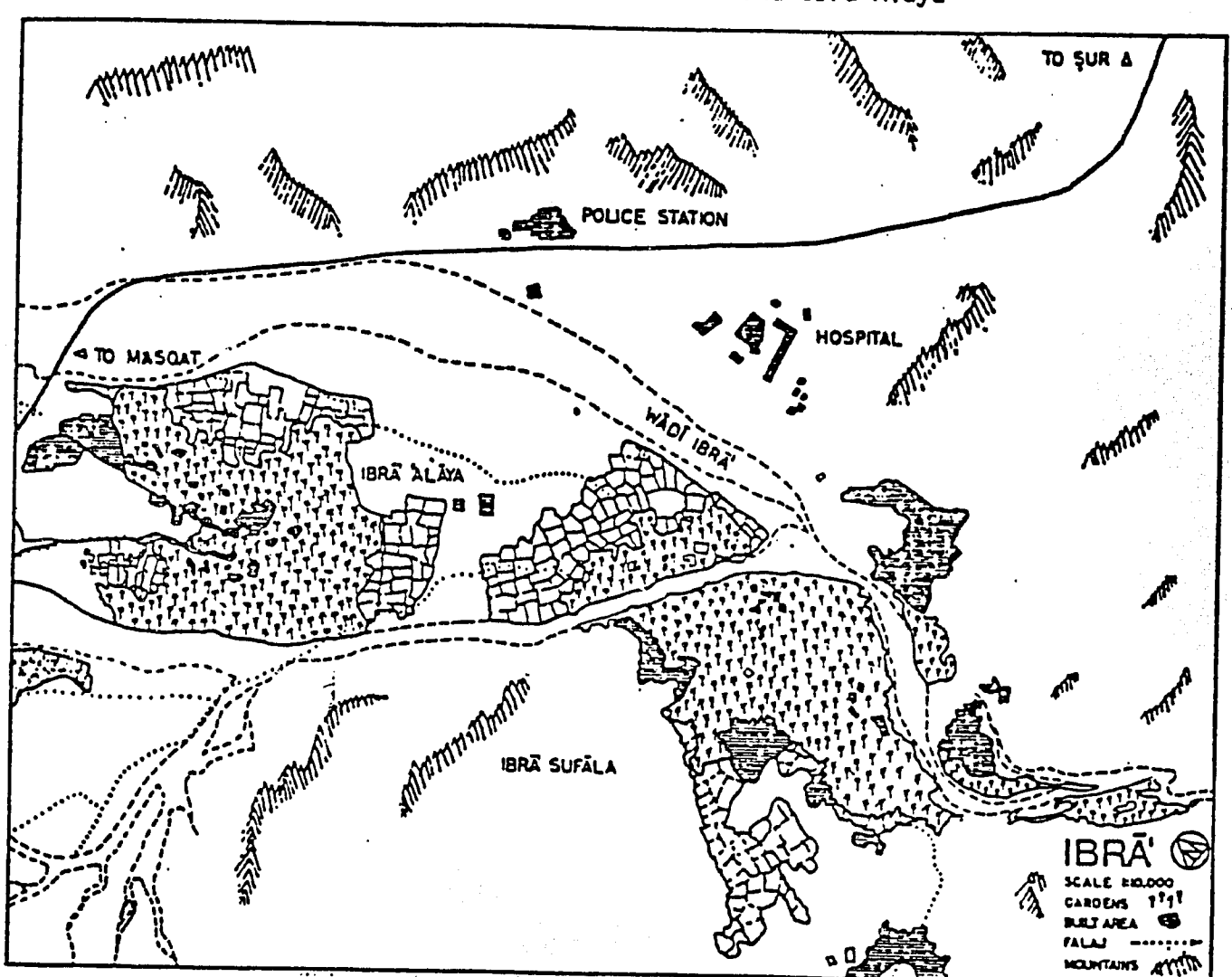
d. Village Institutions: A Spatial and Social Description. The physical arrangement of Omani villages reflects highly specific local conditions such as (1) the nature of the water supply, including the number and direction of aflaj, and the quantity and distribution of orchard and 'awabi land; (2) terrain; (3) the number of villages in the community and their spatial needs and arrangements; (4) internal defense of the community as a whole and as separate haras; (5) external defense, protection of the region and its strategic points; (6) control of local trade routes. All features can assume a role in the development of a community. To discuss the social and spatial arrangements of all Omani villages, large and small, mountain and lowland, is not possible with the existent literature. There are, however, two articles which address these questions and the data is assumed to be generally relevant for much of Oman. Le Cour Grandmaison (1977) and Bonnenfant and Harthi (1977) focus on large towns in the Sharqiya, Ibra and Mudayrib respectively. This discussion will outline the principles of settlement organization based upon this data.

Settlement terminology is easily confused because the distinction between a neighborhood and a village is often left unclarified. In this report a community refers to a settlement which may be characterized by any of the following: (1) a constellation of sub-units or physically separated settlements; (2) two major settlements which are hostile or potentially hostile to one another and enclosed in walled defensive units (Izki, Ibra); (3) a single village or small community of contiguous haras, quarters of neighborhoods representing one or more tribes; (4) a single fully integrated unit or village of one hara such as is found in remote mountain areas where

water is scarce and the population very small. The terms "village" and "neighborhood" are often used in the literature interchangeably but here neighborhood is equated with hara or quarter while village will pertian to discrete units of one or more haras which form a separate entity from the rest of the community (or, in small communities they may be the entire settlement). It should be noted that in cases where a village is composed of two major units which have been traditionally competitive and hostile, each unit may consist of one or several villages.

Ibra, located in the Sharqiya, provides a good illustration of a complex Omani settlement in the form of a dual community. Here resources of

FIGURE 15: Map of Ibra Sufala and Ibra Alaya



From: Le Cour Grandmaison, 1977.

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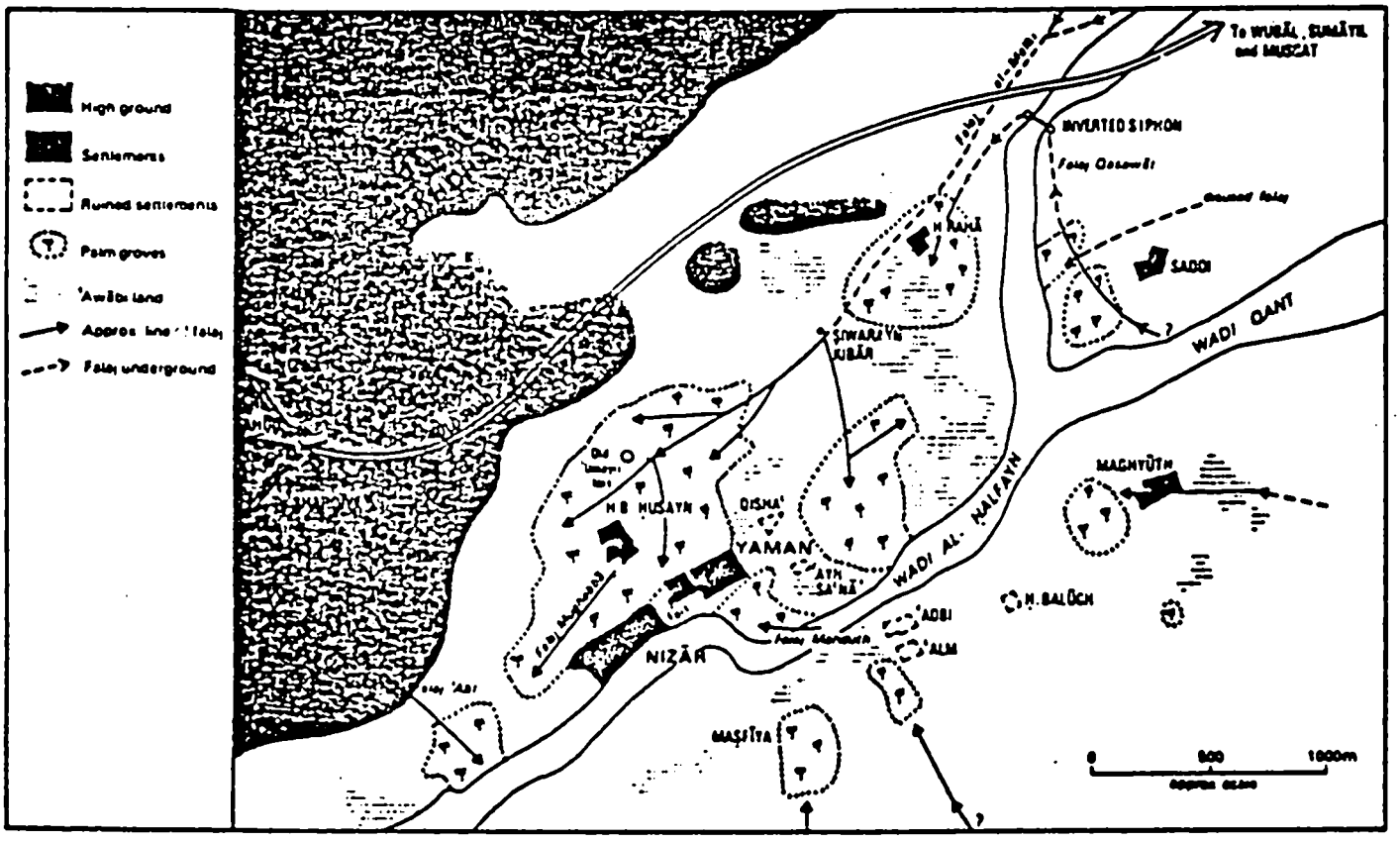
water and space are shared between two mutually hostile tribal groups living in separate units: Ibra Alaya (upper Ibra) and Ibra Sufala (lower Ibra), the former inhabited by the Masakira tribe and the latter by the Hirth. The two sections are watered by aflaj but some haras within the section share falaj water with neighboring haras. In Izki the Falaj Malki is shared by the principle settlements of Nizar and Yaman as well as with smaller settlements. This community has suffered violence during much of its history.

FIGURE 16: Map of Falaj Malki



From: Wilkinson, J.C., 1977.

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27 The terms alaya and sufala are used in other bi-partite Omani settlements as well.

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The school at Ibra is shared by both sections of the community and is located in the 100 meter common land which divides Ibra Alaya and Ibra Sufala. The location of the community market is not discussed but other communities such as Bahla and Mudayrib hold their main markets in a single central location, often near the opening of the falaj since access to water at this point is open to the public. This is usually in the oldest section of a settlement and the falaj mouth may be flanked by old prestigious homes whose builders took advantage of this favored location (Bonnenfant and Hathri 1977:107). Whether bi-partite or single unit communities all oasis settlements have a focal center of public activity. Here in addition to the public falaj, the market and the wealthy homes (often fortified), there may be a community mosque, sabla, and a citadel or other fortifications to protect the core of the town. At Mudayrib the fortified core of the town was extended by adding more haras when tribal units, fukhudh, settled. One the town's periphery are the clinics, schools, police station, and modern service enterprises (garages, cafes and shops). The latter were all recently built and clustered along the tarmac road. Thus the modern administrative sector is represented by buildings, whether or not on the outskirts of the settlement or between segragated tribal units.

The hara is the most significant social unit within the village since it represents solidarity and social cohesion among its members. Like most Omani villages, Mudayrib, Ibra Ayala and Ibra Sufala all consist of sub-sections of tribal units referred to in the literature alternately as: tribal sections, fractions, subdivisions, and fakhadh (plural: fukhudh). Haras are relatively self sufficient. They may have their own mosques, defenses and perhaps even

their own shops as well. The hara relies upon the larger community for the main market, the Friday mosque (only one mosque per community may be used for the Friday sermon), and for whatever government facilities are available. It also depends on it for general cooperation in matters affecting the whole community, such as water or defense. The greatest potential arena of conflict between haras stems from shared water resources whereby a falaj serves two or more neighborhoods. Because the haras are units of social solidarity based upon descent there is little feeling of community unity and the haras are thus apt to quickly oppose one another if rights are perceived of as being denied or usurped.

Le Cour Grandmaison's description of the complexities of falaj administration in Ibra demonstrates the sensitivity of the position of the falaj wakil. It also depicts the principles by which haras which share water choose this administration.[28] Usually if two or more haras share a falaj, the wakil will not be chosen from those tribal sub-units represented in the haras concerned. To protect against partisan interests the wakil would be selected from another tribal section, one without obligations to the fukhudh of the shareholders. Similarly, if two allied groups cohabiting a hara share water, the wakil will be from another hara. It is rare that the wakil is chosen from among the shareholders. There are instances, however, where joint management among haras has occurred but one of the examples which Le Cour Grandmaison cites (1977:98) demonstrates the potential for conflict in such a situation.

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[28] In the past and perhaps today the falaj personnel often were selected from among those within the community who were recognized as ahl il 'ibn. That is, those whose judgment rose above tribal loyalties, and hence could be of any tribal origin.

The hara as a social unit is variable. It may consist of (1) individuals who claim membership within a single descent group or fakhadh sharing a nisba or name of a common ancestor, jadd; (2) two related descent groups or lineages; (3) two allied fakhadh who claim a relationships of asabiya, with mutual obligations; or (4) one or more fakhadh and some members of a client mawla tribe or ex-slave class which are closely associated with the dominant fakhadh or fukhudh. Within all of these hara types the principles of relatedness and solidarity (asabiya) structure and preserve social cohesion and no persons without recognized claims to membership in these sub-tribal groups may reside in the hara.

The haras of Ibra range in population from 150-250 inhabitants all of which belong to family units. Domestic production is organized around agnatic cells which are usually managed by a male family head. Kinship endogamy which characterized the hara maintains the family as a unit and isogamy "perpetuates the double stratification: dominant sections/client groups" (Le Cour Grandmaison 1977:105). This family continuity is coupled with general continuity between members (excepting mawla or ex-slave classes which perform servant duties) in occupation, income level and other socio-economic criteria. Blood and marriage ties are important in the community and these ties enable quarters to respond as a unit to meet any challenge. The community is further bonded by the need to maintain the functioning of the aflaj and it is this imperative which creates a single community from among its parts.

The social institutions of the hara and the community are reflected in the arrangement and distribution of public architecture and private dwellings.

Fortifications are omnipresent in Omani communities and the oldest, core section of the settlement area which encompasses the falaj mouth and most significant community buildings are fortified.[29] This is true at Mudayrib where a circular system of fortifications surrounds the oldest section of the settlement. Each of the haras are walled for both protection and privacy and within them the family compound is also an insular walled unit. It is not unusual for haras to be locked at night. Fields too often are demarcated by remnants of defensive walls, particularly those of hostility divided settlements, as Ibra Alaya and Ibra Sufala.

Burj or towers were often constructed as massive protective units and may be found, often associated with defensive walls overlooking the haras which they were designed to protect. Gates or dirwaza are often a feature of the walled town core and in some instances armory supplies were stored in their flanking towers (Bonnenfant and Harthi 1977:119). As with the towers, communities no longer maintain and repair the city gates which have been razed in some towns for wider roads or to allow for automobile traffic. Fukhudh and rulers of the 19th century constructued qal'as or fortresses in strategic places. These were large complexes which housed cannons and military supplies in case of siege. Different fukhudh took responsibility for defense of different parts of the town and sponsored construction of sufficient defenses. Private institutions such as fortified houses and sablas were linked into larger defensive schemes.

Similar to all Middle Eastern societies, the mosque serves multiple functions. Until the early 1970s when government schools were established the

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[29] Today these fortifications are largely left to fall into disrepair.

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only schools in Interior Oman were the Quranic schools of the mosques. Characteristic of Islam learning is a manifestation of piety. In the past, Omani parents had the option of sending their children to the mosque schools where they studied the alphabet, the Quran, basic principles of Islam, prayer, and other ritual duties. One or more of the mosques in a community would offer these educational services through the mudarris (teacher) who received a small salary from the parents of the students. But the funds needed for educational facilities in some communities such as Mudayrib and al-Qabil, have come mostly from indirect sources of waqf bequests. "In the falaj account book, for example, fully forty athar and waqf for this purpose: twelve for the students; ten for school maintenance; fourteen for the irrigation of lands which themselves were made waqf for the benefit of the students; and four for the teaching of the Koran at (the village of) al 'Ghallaja" (Bonnenfant and Harthi 1977:113).

Mosques are generally numerous and distributed throughout the community. As Bonnenfant and Harthi note, the central core of the community may have one or more mosques and in Mudayrib "upstream from the villages, an isolated mosque stands at the outskirts of the desert; downstream, another can be found between the village and the oasis. Both are like appeals to God for the protection of the falaj and the oasis -- sources of sustenance for the community" (1977:110).

Most haras have their own mosques as well, although only the main mosque is a Friday mosque where the weekly sermon is preached. In Ibadhite ritual a community can have only one main mosque but hara mosques serve as local places of prayer and are usually frequented by members of a fakhadh. They

are either built through the common labor of the fakhadh or hara group or are commissioned by wealthy persons who wish to make a pious contribution to the community and gain prestige. The builder of a mosque usually finds it utilized by relatives and it becomes a place of social as well as spiritual companionship. Often mosques receive revenues from waqf bequests. Various numbers of athar are donated to different aspects of mosque maintenance. One bequest in Mudayrib benefitted the Shanjani mosque in Zanzibar. Another citizen of Oman resident in Zanzibar left a substantial amount in his will for the building of an Ibadhite school and mosque in Mudayrib.

The various mosques within a community may have specific functions. For example, Mudayrib mosques served the following purposes in addition to regular mosque functions: (1) a place of gathering on feast days for the men of the community and their guests; (2) a "Reckoning Mosque" from which the movement of the stars was observed in order to establish the time allocations of water shares. Winter lessons in religion were taught by the Mudayrib Institute here. (3) summer lessons of the Mudayrib Institute; and (4) mosques which are used for prayer during different seasons.

Similar to the village mosques, the sablas are often found in both the community center and in various haras. The community core often has a sabla near the sūq, Friday mosque, falaj mouth, etc., and this central sabla is usually the oldest of the village and is fortified.[30] They are often built by wealthy individuals for use by family members and may receive maintenance

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[30] In addition to the discussion in Bonnenfant and Harthi's architectural survey the sabla is also mentioned in Le Cour Grandmaison 1977 (99-100). Though both of these instances pertain to the Sharqiya it is doubtful that the sabla is restricted to this part of Oman.

funds from trusts. Many sablas are defensive units but this is only one aspect of their social function. The sabla is the most significant social institution of the Omani village and stands in a complementary position with the mosques. Social life revolves around this multi-purpose establishment which has been described as a "common, semi-public reception room" (Bonnenfant and Harthi 1977:115) or, in classical Arabic, majlis 'amm (general or public reception room). The sabla is a family oriented meeting and reception hall and usually carries the name of the principal lineage which it serves. Children are allowed in the sabla and on occasion participate in its functions. Women do not gather there.

The sabla is central to everyday life. Men of the fakhadh meet there several times daily; after a meal, before noon prayers, after going to the afternoon sūq, before evening prayers. Coffee is served and active discussions deal with the current concerns of the community and the members. It is used as a place of gathering for occasions of celebration and mourning. The sabla is a male dormitory for guests of the fakhadh. Most significantly, it is the institution which provides a forum for the process of decision-making among men of the fakhadh. Decisions affecting the group which are considered in the sabla are usually concerns of investment or construction. In the past, discussions were more often over the adoption of a group position, warlike or conciliatory, in matters of dispute with another group within the community. The actual process of decision-making is not discussed in the literature but in tribal Arabian societies generally each family member has a voice. The dominant members, those with prestige and often, wealth, may have greater influence but the relationship between consensus, the ideal form of decision-

making in Arab tribal society, and personal influence is not clear.

This institution offers social interaction among men without disrupting the privacy of individual homes and without bringing family matters into the public arena. Its role in shaping the cohesion of the fakhadh is demonstrated by its use in decision-making, feasts and celebrations and its symbolism as a defensive unit. Personal prestige is often displayed in the sabla. In the Sharqiya the symbols of East African ventures are evident in massive carved doors imported or executed in the styles of Zanzibar.[31]

Omani villagers commonly live in low single story huts built of mud plaster and palm fronds or branches. Currently, cement block construction is becoming more popular. Mud or clay plastered stone is used for more substantial buildings. The small average family dwelling affords little privacy, the multi-room home may use one of its rooms for a guest room. The complex multi-story homes of the wealthy accommodate a variety of needs. Different rooms may be used in order to best utilize cooling summer breezes and retain warmth in enclosed winter quarters. Characteristically, an elaborate home has an entrace, barza, or vestibule, which serves as a transitory vestibule between the public alley and the private home. Guests are received here and are shown to the main room of the first floor. This is the majlis khass, a private (literally: special) reception room. Generally in the summer months both rich and poor households engaging in agricultural activity leave their homes and live in the palm groves.

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[31] An equivalent to the sabla is found in the Ibadhite region of Mzab, Algeria where it is called dar al 'ashira. This is not an exclusive Ibadhite institution for many parts of the Middle East have such village reception places: the madafa of Palestine and Transjordan; the hujra of Pakistan; the mudif of Iraq; the oda and ev of Turkey (for men and women respectively); and related institutions are known from Iran, North Africa and Kurdistan.

In concluding this section on village social organization, several points may be reviewed. Omani villages are settlements which represent and perpetuate tribal social structure. There is a very high correlation between physical, social and geneological closeness, although this has recently been altered by the current movement of young men out of the interior villages in search of wage labor.[32]

The community is a coalition of autonomous units which, like tribal segments, can coalesce for common purposes. Social life and daily concerns are family oriented. Cooperative sharing of water is such as to insure the equitable distribution of water to all rightful shareholders. This is the most critical function of the village whole and its sub-units. Although water companies are private enterprises, their functioning is a public concern and qadis or religious judges decide cases involving the distribution of water to the community.

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[32] Yet this movement is not without precedent for the same phenomenon occurred in the 19th century in the Sharqiya where drought and marginal conditions for agricultural activity prompted many men to leave. The ties with the villages remained however and many made their fortunes in Zanzibar and returned to live permanently in their original Sharqiya villages.

LAND TENURE

Under the Islamic Law of Property Ownership, land, or more specifically, land, water and crops, may be held privately as mulk or by the Islamic state as bayt al mal. Mulk ownership can be purchased or sold by an individual with full rights of use and alienation. Mulk ownership with regard to land can be separately held in categories of earth, crops and water. A more complex breakdown of mulk ownership categories which are pertinent to the village context is provided by Wilkinson and outlined below (1977:68):

Mulk Property.

I. Land

1. amlak - possessions or mobile property
2. atlal - barren land
3. aradi - land, fixed property, land of economic value
   a. uncultivated land; roads, buildings, etc.
   b. agricultural land
      (1) mazra' (plural mazari') permanently cultivated gardens
      (2) 'abi (plural 'awabi) seasonally cultivated land
      (3) ramm deserted property
      (4) haram belonging to the village community grazing lands

II. Crops

1. Ashjar trees and plants within the category of cultivated fruit trees (other plants and trees with economic value belong to bayt al mal, the Islamic state).

III. Water

1. miyah wells
2. aflaj irrigation systems
3. sawaqi distributory irrigation channels

These legal designations of village mulk, in the forms of land, crops and water, serve both to fully delineate the status of all individually held land in the village and to differentiate village land rights from nomad land rights. The haram or village grazing rights to which every individual has claim of access is distinguished from mar'a (plural: mara'i) land which is the general grazing land occupied by bedu and shawawi pastoral groups. A villager can forward a claim of rights based on customary usage but cannot hold such mar'a land as mulk. This serves to define village territorial rights and reduce conflict with pastoral nomads by reducing possible transgressions and infringements upon the nomads.

Bayt al mal is property owned by the Islamic state. This traditionally has accrued through zakat -- the tax levied upon all Muslims which is often gathered as capital for investment to generate income for the Islamic state and the state retains permanent ownership of the property. Traditionally, Islamic societies have relied on the zakat tax for revenue.[33] The Imam usually was the administrator of the bayt al mal of the state although local governors were responsible for the administration of state property in their oasis communities.

Mulk patterns of ownership vary widely due to practices of separate ownership of ground, crop and water. Nevertheless, the owner of a garden sometimes holds water rights, although some do not and must continually bid in weekly auctions for shares of water. The sale of a garden whose owner holds water

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[33] Zakat is institutionalized rather than voluntary giving (sadaqa) although originally both were forms of charity. From the beginning of Islam zakat has been applied to a number of usages however (Stillman 1975:107). Here it became the only means of collection of state revenue.

shares often provides for the sale of the appropriate water shares as well. A falaj company frequently purchases land for its falaj share of the water so that their holding is that of a complete productive unit. The Izki system of irrigation emphasizes the integral relationship between land and water by allowing owners of diverse water shares to draw their shares simultaneously or in whatever way is to the best advantage for the garden plot.

Little research has dealt with the specific question of land ownership in Oman, probably because of the greater abundance of falaj records. Generally, without a strong central government, investment had to be a cooperative private enterprise. This, plus inheritance practices, led to a pattern of small holdings of water shares. As the amount of viable land which a person can hold is a function of access to water, a pattern of small holdings had developed (Wilkinson 1977:122). Furthermore, the introduction of systems of land tenure which disregarded the tribal tradition of small mulk ownership led to collapse of village social structure and economies (Ibid:211). It seems, however, that historically three different processes characterize changing patterns of the distribution of land ownership which vary greatly between settlements and through time.[34]

(1) Individual ownership seems to, at times, be the dominant mode of landholding. Both large and small landowners have existed but little is known about the dynamics of growth of either of these forms of holdings except that Islamic inheritance laws tend to fragment holdings and therefore encourage family members to work their shares jointly.

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[34] These do not imply an evolutionary sequence but reflect the kinds of specific historical and political events which tend to occur in Oman and their impact on land holding.

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(2) At various times, bayt al mal, or state land, has become the dominant form of ownership in a village (Barth 1978; Wilkinson 1977:151). The details of how bayt al mal land accumulates to the extent that it did in Bahla are not clear. This property, belonging to the state treasury, usually accrues through collection of zakat. Through investment, the zakat revenue can generate further income for the state.

(3) Substantial amounts of land can accumulate in the form of waqf trusts. Such individual bequests protect property from illegal confiscation while granting rights of use to the donor and percentages of use to the descendents. In addition, the donor applies a percentage to a religious public charitable institution such as a mosque, school or income for the poor.

Historically it appears that in periods of political tyranny or instability the rulers of a community amassed large land holdings and revenue was concentrated among a few individuals while the majority of agricultural workers, including previous land holders, were contracted as sharecroppers or daily wage laborers. One geographical pattern which Wilkinson has observed in the historical record and which appears to operate today is the difference in land holding between Northern and Central inner Oman. In the former area "much of the land belongs to shaikhly clans and the villagers often farm it on a sharecropping basis" (1977:215). In the latter area land is held locally and the economic benefits are retained within the community.

The sources which best illuminate current patterns of land holdings are two case studies (Barth 1978 and Le Cour Grandmaison 1977). Both works are published in short article form, but they present enough, albeit preliminary, data, demonstrating some features of contemporary land tenure practices.

The former is a study of village economics and the latter is concerned with social organization of space within the village. Both stress the centrality of the aflaj and its relationship to social groupings. The extent to which generalizations about land tenure in inner Oman may be based upon these case studies should not be overestimated. This discussion will stress the similarities which characterize the communities of Bahla and Ibra. Both provide some notion of relative percentages of non-institutional land ownership and a useful view of how the actual functioning of the falaj systems operate.

In his article on the Bahla community, Barth discusses the different markets for the factors of production; land, water and labor (1978). His observations led him to conclude that Bahla society is highly stratified (i.e., one which systematically offers rights and privileges in the form of access to the factors of production to some groups and excludes others from them) along class-lines (wealth, family standing or both). Ownership of the factors of production in Bahla is concentrated in the hands of either a few persons or institutional administrators. The population includes "large numbers of propertyless workers" (Barth 1978:55). Of those with land holdings, just over a third of cultivated land in Bahla is held privately, while almost two-thirds is held as bayt al mal, and the remainder is held by the falaj companies.[35] Of the 20 villagers who do own some land, 19 have to purchase water regularly. The bayt al mal property is apparently administered directly by the town governor and his staff utilizing the services of a wakil, temporary laborers and an auctioneer; an administrative framework similar to a falaj company.

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[35] The local measure of land in Bahla is the standard kraz, the area which can be hoed by two men in one day.

In her study of three neighborhoods in Ibra, Le Cour Grandmaison collected household data and presented some of the findings as follows: in a neighborhood of 240 inhabitants comprising 40 families, 12 people have permanent water rights but 4 of these monopolize large time blocks, the 8 others own only a few half-hour shares in a weekly cycle. The majority of households have no water rights but buy them weekly at auction. One individual is a market gardener, harvesting a large surplus annually which he markets at a profit. In referring to the village in general, she states: "Today the work force is basically made up of peasants having few or no water rights; and descendents of slaves who constitute the handyman group. They carry out various agricultural tasks, build or rebuild houses and scrape and repair aflaj" (Le Cour Grandmaison 1977:102).[36]

In both villages access to water is a far greater obstacle to cultivation than access to land. Land is transferred in a cash market, as are water and labor. Land ownership circulates actively and a survey of private holdings in Bahla showed that half were purchased and half were obtained through inheritance. Land is available for the purchaser and the seller is not charged with any social stigma because of their voluntary alienation of their land. The land market in Bahla and Ibra is much more open than the water market where ownership of shares is seldom marketed and inheritance and/or investment are the primary means of acquisition of shares. Land is a less valued investment than water. Water is the scarcest resource and where water is available, suitable land can usually be found for cultivation.

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[36] The distribution of ownership of land and water shares could be age determined. With the nature of Islamic inheritance, Omani family structure and the scarcity of resources it is likely that holdings are concentrated among family heads and the large percentage of propertyless persons is, in part, affected by the numbers of individuals who work family land but do not yet own their own shares. Leach has described this trend in Ceylon (1967:80).

Barth (1978:69) has drawn attention to the difference in the long term trends in the circulation of land rights as compared with water rights. The market for land is characterized by the following: (1) litigation arising from contradictory clains over land titles; (2) a much greater distribution of ownership within the community; (3) a poor system of record-keeping with regard to transfer of deeds (unlike water transfers); and (4) historical blatant confiscation of land by powerful land owners or by creditors. His conclusion is that these characteristics of land tenure demonstrate "different degrees of security of private property rights" (Barth 1978:70), with water representing a safer, more secure and protected form of asset.

LABOR MIGRATION AND CHANGING PATTERNS OF INVESTMENT: THE IMPACT ON VILLAGE SOCIAL STRUCTURE

To date, there is no comprehensive survey or census data available for the Sultanate of Oman. The material presented in this section is based upon a small sample survey. Extrapolations and conclusions generated from this limited data should be reviewed with caution. Evaluation of this census sample may be forthcoming in the near future when more survey work is carried out and made available.

The most extensive work to date on Omani labor migration, its characteristics, and domestic impact, is based upon a 1975 survey. Durham University (England) carried out a demographic study in a sample region which cross-cut the Batina Coast; the Hajar Mountains and the bajada zone west of Ibri. Extensive household data was collected and used as a basis from which to infer national demographic statistics as well as to chart, inter alia, demogrpahic trends, labor migration, and residence patterns within the sample region. The 1975 survey data was collected and processed by Dr. J. S. Birks who served as Field Team Leader and Demographer for the Durham University Oman Project.

A number of significant monographs and articles were generated from the survey results. In-depth treatment of labor migration and demographic trends are in the following: J. S. Birks, "Some Aspects of Demography Related to Development in the Middle East with Special Reference to the Sultanate of Oman" (1976a); J. S. Birks and C. A. Sinclair, "Movements of Migrant Labour from Parts of the North of the Sultanate of Oman" (1977); J. S. Birks and C. A. Sinclair, "The Sultanate of Oman: Economic Development, the Domestic Labour Market and International Migration" (1978).

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Other articles based on these data deal with case studies of communities or social groups which are in a transitional stage mainly as a result of labor migration and the radical changes in the economic structure of the Gulf States since the 1950s. Among these are J. S. Birks, "The Reaction of Rural Populations to Drought: A Case Study from South East Arabia" (1977); J. S. Birks and S. E. Letts, "Diqal and Muqayada: Dying Oases in Arabia" (1977); J. S. Birks, "Development or Decline of Pastoralists: The Bani Qitab of the Sultanate of Oman: Reactions to Drought" (1978a).

1. History of Migrant Labor in Oman. There are many historical instances in which Omanis have responded to ecological stress, either drought or political-tribally motivated problems, by local migration. In addition, many Omani pastoralists have long histories of seasonal migrations. International migration also has roots in Omani history, for in the 19th century migrants from the Batina Coast and the drought ridden Sharqiya emigrated to Zanzibar and East Africa. Communities of expatriate Omani traders developed in the late 19th and early 20th centuries in the Gulf Coast area as well. Although they were settled by Omani residents, these trading centers were the enterprises of non-Arabs whose original home was the sub-continent. These centers later became a focus for the Omani migration movement which arose in response to the oil-wealth boom of the Gulf region.

Migration abroad first became significant in volume and economic gain under the reign of Sultan bin Taimur, the father of the current Sultan. Imamate sympathizers took up residence in Saudi Arabia in political protest against the Sultan's dissolution of the religious state. These initial political refugees were later joined by their countrymen in Saudi Arabia and

the Gulf states when the contrast between the development of these regions and the stagnation of the Omani economy was sufficient to attract illegal immigrants from Oman. The people of the Batina Coast had been initially attracted to East Africa but the first substantial migrants to the Gulf area were from among the shawawi who were experiencing a surplus of labor. Their successful employment in the Gulf prompted a pattern of poly-annual migration among many of the shawawi. Later they were joined in the Gulf by peoples from the Batina Coast who were bedu pastoralists. Until 1970 all movements out of Oman were illegal and all migrant laborers working abroad without special permission (which was rarely, if ever, granted) were officially exiled.

Financial motivation has been the primary factor for migration. This is with the exception of the political refugees who left Oman when the religious state under the Imam lost its independent authority. In the capital-rich Gulf states even menial tasks are paid up to 20% higher than in Oman, and there is easier availability of "desirable" work. With the labor shortage in Oman urban construction jobs have increasingly been filled by Asians. This has caused wage rates to become depressed (Birks and Sinclair 1977:8). As a result, Omanis in the domestic labor market have rejected the lowered pay scales at home in favor of menial labor in the Gulf area through which there is a possibility of saving for a privately owned enterprise or land and water shares in the future. These jobs are considered demeaning at home but with the higher wages offered in other Arab countries they represent socio-economic advance for the individual. There is also the advantage of purchasing consumer goods abroad, since the inflation rate in Oman has reduced purchasing power relative to neighboring states. Another incentive for migration is that of expectation. Young men are expected to leave home, earn wages, and demon-

strate independence. Peer pressure and family attitudes have created a "tradition of migration" and, in a sense, it has become a "rite of passage". Indeed, without working abroad many Omanis are not able to earn sufficient money to enable them to marry.

2. Demography and Patterns of Movement. Under the previous regime, opportunistic Omanis worked in other parts of the Arabian Peninsula, particularly Saudi Arabia, Kuwait, Qatar and Bahrain. More recently Omanis have migrated to Abu Dhabi and Dubai as opportunities there have increased with the rise in spending on development and infrastructure. Migration within Oman has also increased as development projects have started and new job opportunities have opened, particularly in the capital area of Muscat and Matrah. In addition, some domestic migration has been directed to the oil fields as well. Most of the recent employment opportunities are for unskilled personnel. Movement of expatriate Omanis back into Oman to take advantage of and participate in the new economic, educational and social policies of the government is a result of the new (post 1970) policies of the present Sultan. The returnees include political exiles from the previous regime who had been living in East Africa. Others have come from Saudi Arabia and other Gulf states which housed exiled sympathizers of the previous Imam deposed in 1977 (Birks 1976a:86). Other educated and professional Omanis have also returned and there seems to be a growing sense of participation in the national future of Oman, an optimistic attitude which is a result of the change of rulership in 1970.

Birks has pointed out that precise demographic facts and figures are not necessary in order to identify demographic trends in Oman. In fact, this is the objective of his research (Ibid). While his analyses refer to the figures obtained in the Durham University sample area, the emphasis of the published research is directed to the identification of population trends and their likely significance for the various sectors of Omani economy and society (Birks and Sinclair 1980b).

Labor shortages in Oman's rural areas result from the withdrawal of labor from the rural sector and from the transfer of labor from less desirable to more prestigious occupations. The need for domestic labor has been partially met by the importation of Asian and Oriental labor. Aside from the long standing tradition of employment of Indians and Pakistanis on construction sites and in the building trades of the urban centers a new trend has developed. Asian workers are now found in a variety of occupations within the rural sectors. While they are not yet a significant factor in agricultural labor they are employed in remote areas as shop assistants, barbers and gasoline pump attendants and in more skilled occupations including tailoring, joinery, and welding.[37]

Oman is a country which both employs migrant labor in the forms of (1) internal migration; (2) foreign migrant labor; and (3) expatriate immigration: and exports migrant labor to other Gulf countries. On the basis of the 1975 survey, Birks and Sinclair tabulated population data based on certain assumptions regarding population density. This was done in order to estimate the overall population of Oman. This figure they estimated at

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[37] Asian workers form 83% of the migrant workers entering Oman.

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550,000 in 1975 (probably about as low as 780,000 in 1980).[38] Of this total the work force is estimated at 137,000, exclusive of women, although currently many of them are engaged in farm work. Data collected from recipient countries suggests that in 1975, 38,400 Omanis were employed abroad, or 28% of the domestic workforce.

Generally, Omani migrants in other Gulf countries are unskilled and employed mainly by military establishments and business companies, or as household servants, drivers, and other untrained labor (Birks and Sinclair 1980b: 61). Twenty-three percent of the total number of Omani migrants are economically unproductive. Only five percent of the migrants are full-time students. Although most of the migrants are men between the ages of 15 to 34, boys as young as 10 years also occasionally leave home.

One-fifth of the total (20.8%) migrant labor force does not work abroad but rather in the capital area of Muscat, Ruwi, Matrah, Sib and their surrounding villages. The oil field at Fahud employs 10.5% of Omani migrant labor. Opportunities elsewhere in Oman are limited since movement to Salalah and Dhofar is restricted by the government.

Some women accompany male relatives when they migrate, but the majority of them are deterred from migration by the lack of proper facilities for women abroad such as dormitories or rooming facilities. These accommodations are usually reserved for the male labor force. Even family housing parts of Oman is difficult to obtain for women migrants. But women will travel to areas in Oman which offer special facilities for families. Many men who work at the oasis of Al Ayn in Dubai bring their families because there they can take

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[38] These and other figures presented below were estimated from a sample survey and await verification.

advantage of the medical and educational facilities in the region.

Mountain village people have a greater propensity to migrate than lowland interior or coastal peoples. Small mountain settlements tend to lose the greatest proportion of their residents since these areas are especially limited in employment opportunities. Another factor responsible for migration is what is called the "snowball effect of migration". If too many people leave an area, those left behind will be unable to maintain the falaj and may be forced to abandon the settlement altogether, a more likely consequence of migration in a small settlement. In this respect, the small settlements demonstrate the highest migration rates. Nevertheless, the majority of Omani settlements even today are small villages.

Commercial trade centers such as Araqi and Ibri experience less migration because of the higher opportunities for local employment. Furthermore, wealthy residents, who form a significant percentage of the male populations of these trade centers, do not feel compelled to leave. Similarly, the Batina villages have experienced greater economic development and higher rates of local wage employment. Again this is reflected in the lower out-migration rate for the native population.

Wage employment opportunities for women in Oman are limited. This accounts for their low out-migration rate from the villages. Few women are employed by the army as office employees, but they constitute only 2.3% of the total number of migrant women. Of the remaining total, 4.9% attend school away from home and 91.7% are occupied full-time at the home (Birks and Sinclair 197:32). Educated women do tend to participate in the economy.

Studies on returning migrant workers (1974-1975) in Oman were also components of the 1975 survey. It was revealed that these people may bring

capital to Oman to start small-scale business enterprises. Since 11.5% of returning migrants return to their village of origin, many establish themselves as traders of some sort. However, many more migrants return to unskilled employment (30.6%) since they do not have the training to enable them to compete for skilled jobs. In some cases returning migrants (9.3%) resettle in their native communities and do not seek employment. It appears that in these cases the unrealistic expectations and experiences in the Gulf states result in a rejection of traditional employment which is less than Gulf level wages. Disillusionment and bitterness characterize these unemployed persons who eventually must face the acceptance of local wages or move back to the Gulf.

The fact that many skilled Omanis return to Oman when employment is available to match their training abroad is demonstrated by the number of qualified Omanis who do return to their country. They comprise 7.3% of returning migrant workers and for the most part are trained in health services or vehicle repair services. The number of jobs in Oman for skilled workers is limited and their contribution to the economy is not yet significant. Villages often do not benefit from the skills of these returnees since the capital cities of Oman have greater job opportunities and are more attractive to trained workers.

Those returnees who engage in cultivation (5% of the total) return because they wish to own land. They tend to return with sufficient capital to cultivate their own gardens. In some cases they purchase mechanized pumps to water their gardens.

The occupational profile of villages reflects the reality that many of the now permanently settled villagers were once migrants. Many of these migrants returned with the same percentages of skills as reflected in the analysis of more recently returned migrants reviewed above. Among the migrants who returned to their villages within 10 years of the survey, 12.4% are farmers, half of them working pump well farms, and the other half are employed in falaj operated cultivation. Birks' view of these statistics is expressed as follows: "it is perhaps better to consider this as a move from communally based to individually organized farming, rather than a true evolution from subsistence farming to cash cropping" (Ibid:57). The significance of this trend toward individual investment will be further discussed.

Wealthy Omanis generally migrate less for employment than other classes of Omanis, and a significant element within this group is the shaykhly class. This class of Omanis usually must stay in residence in order to properly fulfill their duties. Today, however, many senior figures of the shaykhly class are involuntarily absent from their homes because of their nomination to government posts.

Another group of able-bodied persons which has experienced little spatial mobility is the servant class whose freedom in traditional Omani society is limited. Bayasira and descendents of slaves are presently legal citizens, but in practice their freedom of movement is curtailed by their traditional patrons (Ibid:65). The shaykhly class and patron groups are even more dependent upon the presence of this servant class than in the past, since the migration movement has drastically reduced available labor from other classes.

The bidar class has not been as mobile as might be expected, a fact which Birks and Sinclair attribute to their "traditionally servile status" (Ibid:65). The bidar who receives traditional privileges or charities might be reluctant to jeopardize these in order to seek employment elsewhere. Bidar subsistence is dependent upon a working relationship with a landowner and landowners provide the bidar with privileges because their services are critical to cultivation. Bidar who do leave for labor opportunities elsewhere seldom return to agricultural labor after completing their period of work abroad.

3. Psychological Aspects of the Labor Migration Movement. The long history of migrant labor in Oman witnessed the seasonal movement of coastal fishermen and desert bedu to the Interior of Oman during harvest season. Northern Omanis once engaged in seasonal pearling along the pearl banks of the Trucial Coast. But the recent larger scale migrations of the last 20 years have had profound effects upon the Omani outlook and world view. The recent Omani experience with modernization, mechanization, and higher standards of living in the oil rich Gulf started long before modern machinery and tools were permitted in Oman. The ban on mechanization was lifted in Oman in 1970 at which time the use of modern equipment as new forms of investment (pumps for wells, motorized fishing boats, cars, etc.) were allowed.[39] Expectations changed with the first introduction of new technology in the Gulf states and Omanis were frustrated by the lack of modern investment opportunities in their homeland. Since 1970 these expectations have grown and encouraged further

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[39] Wace (1969) notes the large increase in imported technology in Muscat just before the overthrow of Sultan Sa'id bin Taimur. The Sultan had begun cautious planning of several development programs and had relaxed restrictions on imported technology.

migration among those expecting to earn enough to purchase technological goods with which to raise productivity and hence the standards of living at home (Birks 1976a).

Despite rising expectations and the desire to participate in modernized forms of production, a large percentage of returning wage laborers in Oman return without sufficient cash with which to make capital investments. In addition, the experience of working in the wage labor market outside of the native village often results in the migrant undergoing a radical shift in attitude concerning his own role in traditional village agriculture and other village subsistence activities. When returning home on weekly or periodic visits such as vacation periods, the migrants usually do not engage in agricultural work since they feel they have made their contribution in the form of their wages and goods brought back from abroad. As a result, there is little or no labor input from migrants despite the critical labor shortages their absences have caused. Birks assesses the critical nature of this loss of labor as follows: "the long term damaging impact of the movement of labor has been far greater than the benefits it has brought in the short term" (1976a:85).

Migration for cash employment in the past, and in some cases today, was motivated by the need to supplement traditional sources of income and provided the means for additional investment. For example, pastoralists migrated under stress of drought or other circumstances in order to earn enough income to sustain their flocks through periods of scarce resources. Contemporary migration is no longer a mechanism for perpetuating the traditional forms of production. Occupational mobility itself has become a

primary motivation for migration. Oman often is characterized as an upwardly mobile society and status is often a reflection of occupation. Men from any class who achieve wealth (historically this was accomplished through migration abroad, particularly to East Africa) may buy shares in land and water or pursue whatever occupation they chose. Although these remain unproven impressions on the part of observers, it appears that with the new attitudes and employment opportunities, there has been a reduction of labor in such categories as tanning, fishing, and village level construction in addition to pastoralism and agriculture. For example, a farmer may leave home and become a "taxi-driver, a trader, a shop-keeper, or a mechanic" (Birks and Sinclair 1980b:62) and these occupations bring higher wages and status than traditional occupations.

Migrants usually are attracted to urban areas and in Wilkinson's opinion (1978), urban attitudes seem to have had an impact upon the migrants. Agriculture and other rural activities are now undervalued and considered to be of low status by urbanites. This attitude has affected the attitudes of cultivators who, although they make up the majority of Omani workers appear now to be seeking alternative forms of employment, many of which have only recently become available for Omanis. These new employment opportunities are a result of the increased needs for services associated with mechanization, modernization, and development.

4. <u>The Impact of Labor Migration</u>. The impact of migrant labor movements has been greater upon the economy of the better integrated village societies of rural Oman than on the smaller, less developed villages. This impact is however felt in all sectors of the rural economy, particularly agriculture,

pastoralism, and craft production. In social terms, the greatest influence of migration has been in changing traditional sex roles. Women take on a new and wider range of responsibilities and assume a greater role in decision-making.

a. Agriculture. The effects of absenteeism upon village based agriculture are numerous and must be analyzed in a systematic fashion. A summary of these are: (1) marked reduction in irrigated land and the area of cultivation. A sample survey showed the area under cultivation to have been reduced to 38% of its former size; (2) a fall in the standards of animal husbandry and crop in Oman during the last 20-30 years; (3) a reduction in crop yields; (4) previously self-sufficient villages are reliant upon imported foodstuffs. Cash incomes make it possible for villages to have access to other foods and a more varied diet; (5) the destruction of the irrigation system infrastructure in qanat aflaj communities. Because of absenteeism, manpower has dropped below the level necessary for falaj maintenance. As a result, the functioning of social institutions dependent upon waqf and other trusts based on agricultural revenue may be eroded; and (6) because of lowered maintenance standards, the agricultural community is much more vulnerable to drought.

The above points illustrate the problems of change in a society which is technologically, socially, ecologically, and demographically integrated. As noted above, village communities in Oman are dependent upon the base flow of available water and manpower. The area under cultivation reflects this combination of factors but there is a ceiling above which the population is too large to subsist upon its agricultural resources. There is also a baseline

below which a reduction in population can effect a breakdown of falaj based irrigation agriculture.

Labor shortages result in the general demise of agriculture, but more specifically they produce a contraction in seasonal farming both on the Batin Coast and in Interior Oman. Cultivation of winter wheat is labor intensive in rural Oman and forms a secondary component of village agriculture, the primary activity is date palm cultivation. Labor shortages affect the seasonal crops in much the same way as past temporary water shortages have done. Since the seasonal crop fields were the most expendible, they were the first to be abandoned. Birks and Sinclair (1980b:61) estimate that winter wheat cultivation is now at 25% of its 1960 level.

This decline in agricultural production is a direct result of labor migration. But it is further aggravated by water shortages in some areas and changing food preferences as attested by the increasing consumption of rice. Available labor is too expensive to employ for cultivation of crops other than the staple date palm. With the high rates of absenteeism, even the shakhys' traditional power to direct and utilize labor has been reduced. Consequently contractions in the area of cultivation are due to: (1) fewer people available for farming; and (2) less water available because of reduced manpower in residence to maintain the falaj systems.

The withdrawal of specialized agricultural labor, the bayadir, although constituting only a small percentage of the total migrant labor movement, has notable effects upon the quality of agriculture. Traditionally working as specialized tenders of date palms and managers of falaj irrigation, some of

the bayadir have sought work elsewhere. Of those bayadir who return to Oman, very few (1.6% of the total) re-adopt the occupation of bidar, a factor which has furthered the decline of agriculture.

At present the migration of the bayadir continues despite increases in remunderation which are provided in addition to traditional payments. Substitute labor in the form of landlords themselves and hired labor does not adequately compensate for the management skills of the bidar, and because of this yields have fallen. Shortages of agricultural labor in other categories further results in declines in the quality of agricultural production in Oman. In general the falaj systems experience similar neglect with the result that rain shortages presently have a greater impact on crop production. Reduced water flows through lack of maintenance are not adequately compensated by rainfall.

Certainly many Omani villages are experiencing a deterioration of agriculture which affects all aspects of production as well as the structure of investment and division of labor.

> the lack of effort directed by so much of the population towards agriculture is typified and represented by the decrepit state of so many Omani villages. Villages feel the rewards for effort expended locally are so low that not only do the absenttes withdraw from agriculture and the provision of more than a minimum water supply but also in many instance from the repair of their villages (Birks and Sinclair 1977:69).

At present, this situation is being overcome by the effect of investment of expenditures (Birks: personal communication).

b. Pastoralism. Nomadic bedu and shawawi groups from the Batina Coast and the Dhahira were the first populations in Oman, aside from the farmers of the Sharqiya, to migrate. This was due to a surplus of labor and the need to supplement traditional incomes. In much the same ways as migration affects the structure of village agriculture, pastoralism has also suffered. High rates of absenteeism due to out-migration have led in the

last two decades to flock reductions as high as 95% of the previous flock size. The consequence of this decline is: (1) the virtual end of transhumant movements; and (2) shortages in the indigenous meat supply resulting in higher domestic meat prices (Birks 1976a).

According to the findings of Birks and Sinclair, it appears that the nomadic life style of both the bedu and the shawawi has been completely transformed. In the Dhahira and along the Batina Coast pastoralism is most seriously affected and in these areas the residents have ceased to be nomads and in many cases they are no longer livestock owners. In the past, these areas supplied village markets with meat. Yet with flock reductions and the pastoralist's subsistence increasingly based upon cash remittances, villages are experiencing serious shortages of meat and inflated prices for available meats. The former pastoralists now maintain flock size at a subsistence level or less. Traditional herding is now completely superseded by cash income.

Traditional pastoral services have also declined, through a change in the control of commerce. Trade is now largely organized by urban merchants. Transportation services provided by pastoralists were once the vital link which integrated oasis settlements into a larger, regional economy. Motorized transport has become the major mode of commodity transport reducing employment opportunities for pastoralists. The new transportation industry is serviced by laborers returning to the rural areas and who learned driving skills through their previous employment. These former migrants have become the agents of overland transportation. Many of them provide these services on behalf of their employer who owns the vehicle, while others invest in their own vehicle. These lorry drivers may also be operating a taxi, trading or providing other services.

c. Craft Production. Non-agricultural activities involving craft production are engaged in by part-time cultivators. With the loss of village labor, craft production has also declined. Returning migrants usually have the same attitude toward traditional crafts as they do toward agriculture; thus they are reluctant to engage in craft production activity.

d. Village Social Organization. The social reprecussions of labor migration have been interpreted by some researchers as both positive, as in the changing role of women and the availability of imported goods and new resources (Birks 1976a) and by other researchers as negative such as in the effects upon social services for the community, labor availability, and investment patterns (Wilkinson 1978, 1980).

The more global perspective of Omani men who worked abroad and were introduced to new cultural values has helped them to gradually support an expanding role for Omani women. In addition, the numbers of married women and mothers managing their own households has de facto led to a more overt or visible role for women. Birks has suggested that a positive result of migration is that Omanis are undergoing a "speedy evolution of social values" (Ibid:85). While this optimistic statement should be understood in its relative context, it appears that gradual adjustments are being made as Omanis seek to participate in social trends which are slowly gaining acceptance in Arabia. By western standards, Omani social changes might be perceived of as painfully slow, although for Omanis they constitute major changes in traditional roles and values.

Women today are more active in household and village economies. New decision-making responsibilities are a result of their experience in household

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management. As an example of increased female participation and public visibility, Birks cites instances of women carrying the bier at funerals, a social function which previously was exclusively a male activity (1976a:85). Women presently assume an active part in the irrigation and harvesting of date crops (Ibid:86). Their level of participation in traditionally male occupations has resulted in a marked increase in labor resources. This trend could become increasingly significant for the domestic labor supply as the rigidity of the historical sexual division of labor is lessened.

Similarly, among the shawawi pastoralists work normally done by men is now the responsibility of women. This is because on average almost 70% of shawawi men of the Dhahira in the 14 to 40 age group are absent. Women assume the role of household head when fariqs (shawawi residence groups) have no adult male in residence (Birks 1976:13). Yet not all pastoral tasks have been successfully assumed by women. For example, women do not look for stray or lost animals, an important aspect of herd management. It is unclear as to the willingness of these women to take responsibility for decisions which involve the organizations of fariq movements from one location to another, an action which normally takes place several times a year.

Migrants, while abroad, have benefited from medical facilities. In addition, as mentioned above, the effects of migration and a broadening of social perspectives have influenced social values in traditional Oman. The occupational mobility which migrant labor has offered for some Omani helped to decrease the influence of the traditional Oman occupational hierarchy, although this seems to have resulted more in a reshuffling of

occupational statuses with the influx of new forms of occupation than in a reduction of the social associational ties between status and occupation.

e. Migration and Rural Development. The availability of new technology and the decline of tribal and community based falaj investment has led to a new pattern of agricultural development both among wealthier farmers and returning migrants with capital for investment. Among those returnees who desire to become landowners and re-establish rural residence, the nuclear family production unit has also become an investment unit. An expansion of agriculture through individually owned pump wells is also taking place.[40] Despite the establishment of these new gardens, contraction of agriculture remains a major problem. As family operated enterprises they are convenient and efficient, but not profitable beyond subsistence levels. Investments in pumps and fuel expenditures add to the costs of operating these new gardens.

As a form of subsistence farming, pump well gardens do not represent increased inputs into agriculture but are causing a transfer of labor from falaj irrigated land. In this respect, pump well irrigation becomes another factor contributing to the decline of falaj cultivation. This transfer of effort or labor away from the communal system to an individual enterprise is not restricted to the agricultural sector alone but has affected other aspects of production in Oman as well.

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[40] The expansion of well farming may have serious hydrological consequences for Interior Oman. Well irrigation is best suited to the Batina Coast but there too new mechanized pump wells have made only a small contribution to the local economy.

This trend towards individual investment as a result of the financial and educative experience on the part of migrant laborers is not always the case. Birks and Sinclair (1977) document a process of communal agricultural development in the village of Khadil Safil. Men from this village went to work in the Arab Gulf with the specific intention of supporting and developing the traditional system of agriculture. Money was directed to falaj development and expansion of the area of cultivation. This settlement has continued falaj irrigation as well as increased its potential and the amount of land devoted to cash crops.

f. Investment in Social Organization. Wilkinson's views on the current transitions in Omani village life are less concerned with the movement of migrant labor and its role as a catalyst for social change. His works present a complementary focus on political factors and the impact of mechanization in conjunction with migration as the motivations behind the neglect of the aflaj and the reduction in village viability. He also projects further into questions regarding the significance of the abandonment of communal investment for sccial services (Wilkinson 1978, 1980).

Wilkinson's hypothesis is that with peace, improved communications and mechanization, changes were introduced into the village communities which deeply affected the traditional social structure and economy. These changes explain the development of monetization and migration responses. They also explain the changing investment patterns and neglect of the aflaj as consequences. Wilkinson's argument is that the cohesion of Omani villages as

social units rests upon the need for and ability of the entire community to participate in the management of the falaj. While not all individuals in the community own falaj shares, they all depend upon it for water and support of social institutions. Waqf revenues which support mosques, schools and charities, bayt al mal revenues of the Islamic state and individual bequests for the construction of sablas and their maintenance are all examples of social institutions which are dependent upon athars (units of water) and/or land and crop revenues which have been set aside for their use. Revenues can only be generated through the proper functioning of the falaj and the agricultural processes around which village organization has been structured.

Wilkinson suggests that the rapid modernization manifested in the private ownership of capital such as pumps, reduced the immediately perceived needs for community investment in favor of individual ownership. Nonetheless, it appears that village social structure is dependent upon the communal organization of aflaj. This raises several questions concerning the future of waqf investment and support of community services. While it is conceivable that individuals might be successful enough as pump-well garden owners to sponsor waqf endowments, it remains to be seen whether the change away from communal ownership will be accompanied by a change in support for community institutions. A movement away from the focus on community services implies changing notions of prestige and status and the development of new modes of social recognition. However, traditional education presently is not suffering as much as it might seem. Areas where communities are too small to have a government school, traditional Qaranic education is subsidized by the government. In places where government schools do exist the community leaders have organized summer Quranic schools (Birks and Sinclair 1978:6).

5. Case Studies: Migration and Community Transition. The Durham University articles describe the effects of labor migration on specific village and pastoral communities. These case studies describe the complex interrelated problems which migration has contributed to and the inability of communities to successfully cope with environmental stress under these circumstances. Among these reports are: J. S. Birks, "The Shawawi Population of Northern Oman: a Pastoral Society in Transition" (1976); J. S. Birks, "The Reaction of Rural Populations to Drought: A Case Study from East Arabia" (1977); J. S. Birks and S. E. Letts, "Diqal and Muqayda: Dying Oases in Arabia" (1977); J. S. Birks, "Development or Decline of Pastoralists: The Bani Qitab of the Sultanate of Oman" (1978); and J. S. Birks, "The Mountain Pastoralists of the Sultanate of Oman: Reactions to Drought" (1978a). Decision-making among pastoralists is mentioned previously in the section on the role of pastoralism in the village economy. The complexity of pastoral decision-making need not be reiterated here. In contrast, the forces which have led in some cases to the total abandonment of agricultural communities will be reviewed. A summary of the sequence of events as outlined in Birks (1977) serves to illustrate the salient points of village decline and the factors which influence community decision-making.

The village of Ghayzayn is located in the western Hajar Mountains to the east and slightly north of Ibri. In the years 1973-1975 this village and others in the Waid Hawasina were suffering from a shortage of rainfall. In 1973 Ghayzayn had a population of 505 and 50 hectares of cultivated land irrigated by a falaj. In November of 1973, the falaj was at a fairly consistent 820 g.p.m. (gallons per minute). With the ensuing reduction in

rainfall, the seasonal crops were abandoned. By June 1974 the flow of water was less than 90 g.p.m., and the last area of alfalfa cultivation ceased to receive water. All water was used for palm irrigation. Becuase of this low water volume, the quality of the dates was declining and it became difficult to keep the trees alive. As a result of the decline in the production of seasonal crops, village livestock were supported by alfalfa purchased from another village. Villagers had to pay the costs of purchase and of transportation and in order to do this some had to sell livestock. In short, these developments greatly eroded the wealth of the community.

In July of 1974, the decreasing flow of water, 70 g.p.m., prompted the decision to open only one of the two major irrigation distributaries at any given time. Thus the cycle of irrigation was extended from seven to fourteen days. Even then the volume was insufficient to water an entire plot in one cycle so many trees were irrigated every other cycle: once every twenty-eight days. The young palms and the lime trees died as a consequence of this. A village cistern was used to reduce losses. The quality of water was so poor that some people relied upon imported drinking water. But no attempt was made to improve the falaj. Attitudes of the villagers ranged from extreme optimism to abject pssimism, but procrastination seemed to characterize the entire community.

Abesentee landlords owned land elsewhere and did not make investments which were required for agriculture in Ghayzayn. Since they were also prominent members of a local tribe, their disinterest meant tribal support was not offered. Local villagers were reluctant to invest in irrigation infrastructure for the benefit of the absentee landlords. Because of the

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drought, necessary purchases of dates for subsistence and fodder further impoverished the villagers. Migrant labor leaving the village increased during this period. Seventy percent of males between the ages of 15 and 39 left the village to earn cash to supplement subsistence earnings. Cash income became increasingly significant in the village economy. The withdrawal of labor further reduced the potential for the villagers to improve the falaj, and, as a result, several families left the village. The outmigration of large numbers of villagers motivated the senior shakhys of the tribe to investigate the falaj. A structural fault was found and the solution seemed feasible. The villagers did not remedy the situation however, for they asserted that they had neither the funds nor the labor supply necessary for repairs (Birks believes that the problem could have been solved through mobilization of resources. Ibid:304).

The sequence of events in Ghayzayn illustrates the erosion of communal and tribal responsibilities and its reflection in the attitudes of the community. Combined factors of (1) disinterest of absentee landlords; (2) increasing debts; and (3) labor shortages led the villagers not to intensify agricultural efforts in order to counteract the effects of drought, but rather to withdraw from agriculture and increase their dependence upon outside incomes.

Diqal and Muqayda, also in the Hajar Mountains, are communities which similarly experienced an agricultural decline and in these cases labor migration is a principal factor in the communities' inability to maintain the necessary levels of falaj flow (Birks and Letts 1977:148). Two decades ago the population of Diqal was 275 and Muqayda 56. Today, Diqal has 156 inhabitants and Muqayda is completely abandoned. The migration of men from these communities combined with local fears and superstitions regarding the falaj

tunnels and the high cost of 'Awamr (falaj specialists) labor, have led to drastic declines in productivity. With the demise of tribal loyalties and willingness to contribute required funds, residents responded by resettling in larger oases communities. When migration and relocation of families increased, the ability of these remaining families to sustain any viable flow of water declined and, in the case of Muqayda, all of the inhabitants had to leave.

6. Labor Migration -- Future Trends in Oman. The short-term benefits of wage labor are a major threat to the agricultural base of Oman. The long range prospects of employment security in the Gulf region are uncertain but Birks points out that, inevitably, there will be a reduction in oil production revenues (1976a). Migrant Omanis would likely find themselves without employment in the Gulf area and faced with the dismal situation of their rural areas. That is, home villages which have fallen into such disrepair that the capital necessary to repair them would be almost impossible to raise. Particularly, migrants without skills would have insufficient savings to forward capital funds. A similar situation faces pastoralists if they were to return to herding. They would be confronted with the need to replenish their drastically reduced herds.

If Omanis were to return in substantial numbers the birth rate would rise. This, combined with an apparently falling infant mortality rate (currently a little over 200 per thousand), would lead to a rapid increase in the rate of population growth (Birks 1976a:87). Serious problems would arise if this trend, estimated at a projected 3.4% per annum were to occur

at a time of economic difficulties as a result of declining petroleum revenues. The social and economic consequences of such a scenario would have a significant impact upon Oman.

Eventually it is likely that the rising expectations of Omanis will be confronted by: (1) a decline in Omani oil revenues; (2) a reduction in the number of Omanis abroad and in the amount of remittances; and (3) a generally stressful situation in the Omani economy. Already the rising expectations of Omanis, as a result of higher wages and standards of living abroad, have influenced the domestic economy. Labor has been imported from abroad to replace Omani labor in the development of the modern sector within Oman resulting in the separation of Omanis from that development. Returning migrant Omanis have neither the skills required in the modern sector nor the willingness to join, as co-workers, people whom they view as foreigners. At present Omanis do not generally work in the building industry or on construction sites because of its association with immigrant labor. This situation is perpetuating a division in the economy. With the rejection of unskilled work, because of ethnic bias, high wage expectations and the collapse of village agriculture, the question is raised as to what role the unskilled returning migrants will fill in the future Omani economy and particularly if they return in large numbers. As illustrated in the case studies, capital is not readily available, even in a time of crisis; it is likely that as Omani oil exports reduce, capital will become increasingly harder to obtain. Already it appears that this trend corresponds to that of an ever increasing deterioration of aflaj which must depend on capital inputs if Oman is to remain above subsistence level agriculture.

According to Birks and Sinclair (1977), Omani migration rates are unlikely to decrease in the future so long as wage and opportunity differentials exist between Oman and its neighbors. Omanis are faced with these realities, but despite the higher wages, they prefer not to take menial jobs in the Gulf. Whenever possible, they seek jobs which do not require manual labor: watchman, guard, doorman, and office boy. These jobs are objectives of many migrant unskilled Omanis but these positions are unproductive in that migrants return to Oman with some savings but no marketable experience.

The character of the Omani migrant laborer may change in the near future. As transportation and communication facilities improve, the average time length of the trips from home (just over nine months in 1975) should drop. Laborers will probably visit their families more frequently. Another reason for this trend, and one which is already in evidence, is the increasing concentration of migrants in areas closer to their homes. Greater numbers of migrant Omanis are employed in the United Arab Emirates, Sallala and the capital areas of Muscta/Matrah.

Previous migrations, with the exception of movements to East Africa, have been temporary. Few families have settled permanently outside of Oman. But there are indications that in the future this also will change. Surveys in the Dhahira and the al Khabura areas (Birks and Sinclair 1977:78) indicate that some families may seek to settle in the Gulf states at least on a semi-permanent basis.

7. Summary. The withdrawal of labor from the agricultural sector is not merely a problem of absenteeism. Returning migrant workers are often reluctant to engage in agricultural work. Those who can afford to invest in their own farms operate subsistence level family enterprises which do not hire labor or contribute significantly to the local economy. Occupational change has drawn many people away from agriculture. Persons adopting non-agricultural professions may return to work in the rural sector but many of the skilled prefer to work in the urban areas where more jobs are available. Changes in attitude manifest themselves in both the lowered status of agricultural labor and in the higher premium of leisure time. The latter is demonstrated by the numbers of able-bodied persons unemployed in the rural sector which represent "a pool of labour which, under the present level of incentives, it is not possible to utilize" (Ibid:72). The initial attitude toward migration was that it was a supplementary activity and the agricultural sector was still considered of primary importance. More currently, migrant labor has become the major occupational focus of much of the working population with local economic concerns falling to a lower priority level.

Asian labor has been widely employed in the construction industry and has in part compensated for the absence of Omanis from the domestic labor market. Asian labor is entering the village economies but as yet there are few Asians employed in the agricultural sector. Some landowners have hired Asians on Batina Coast farms and others have expressed an interest in hiring immigrant labor. Birks and Sinclair have cautioned against the potential deleterious effects of employment of Asians in agriculture (1977:74). They assert that Omani attitudes towards agriculture could decline further and that Omanis might be reluctant to work with Asian agricultural laborers as has been the case in the building industry.

RELIGION

Several forces have had tremendous impacts upon shaping and defining the Omani politico-religious profile. Some of these forces, such as the Qahtani/'Adnani tribal division, date as far back as the pre-Islamic period. Others, such as the Ibadhi/Sunni sectional and the Hinnawi/Ghafiri factional divisions are more recent (Eickelman 1980; Kelly 1974; Khan 1974; Peterson 1978; Wilkinson 1970).

1. The Qahtani/'Adnani Tribal Division. This refers to the origin of the Arab tribes that migrated to Oman in the pre-Islamic period. The Qahtanis (Yemenis) are the people who originated from Southern Arabia and claim descent from Qahtan. The 'Adnanis (Nizaris) claim descent from 'Adnan and they came from further north.

2. The Ibadhi/Sunni Sects. Although other religious sects manifest themselves in Oman, the Ibadhis and the Sunnis form the great majority. Writers tend to agree that Ibadhism is the dominant sect in Oman (i.e., Peterson 1978; Kelly 1970; Wilkinson 1970), but as Eickelman states, this is hard to document in the absence of a proper census of the country (1980). Sunnis form the second largest sect, "...with adherents ranging from the tribes of the Ja'lan and al'Zahira to the Baluchis of the Batina coast... Other Sunnis are to be found among the ethnically distinctive tribes of Musandam and Dhufar" (Peterson 1978:22). The third largest group is the Shi'as. They tend to concentrate in the Batina coastal area especially in the towns of Muscat and Matrah. "Many are Khojas, members of a close-knit

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community originally from India but resident in Oman as merchants for several years. They inhabit a separate walled quarter in Matrah, known as Sur al-Liwatiya, and also have communities in Sur, Barka, Suhar, al-Khabura, and al-Masna'a" (Ibid). Two other Shi'a groups are the Bahranis -- Twelvers of Iraqi or Persian origin, and the 'Ajamis who are also believed to have come from persia. Like the Khojas, both groups are mainly traders.

The major non-Muslim group are Indian Hindus. Like the Khojas they are mainly traders and concentrate on the Batina Coast and around Muscat and Matrah. Unlike the Muslim Khojas, who were allowed to assimilate in the Omani community and get Omani citizenship, the Indian Hindus were protected by the British government and given British passports (Peterson 1978:22). There are no indigenous Christian or Jewish communities in Oman today although it is believed that a small Jewish community existed there in the pre-Islamic era (Ibid). Two other groups are referred to by Peterson as classes: (1) unassimilated, probably pre-Islamic groups that are associated with certain occupations--the Bayadir who are date garden attendants, usually paid in kind; the Bayasira, semi-artisans; the Zatut, metal workers, carpenters, and performers of circumcision; and (2) several minor tribal groups such as the Harasis and the Batahira who reside in the southern part of Oman between Dhufar and the Northern region (Ibid).

3. Ibadhism. Ibadhism, which is now a major Islamic sect in Oman, was one of the main branches of the Khawarij (one of the important sects of early Islam) and according to many Islamic historians the only one that survives today. Four Caliphs followed the Prophet Mohamed -- Abu Bakir, 'Omar, 'Uthman, and 'Ali. After the third Caliph 'Uthman was

assasinated, the battle of Siffeen took place between 'Ali, the fourth Caliph and Mu'awiya bin Abi Sufyan, the then wali (governor) of Syria (Mu'aawiya became the first Caliph in the Ommayad dynasty which followed that of the Prophet and his four Caliphs). When Mu'awiya realized he was near defeat he asked 'Ali for an arbitration by raising copies of the Quran on the heads of swords. 'Ali accepted the proposal reluctantly upon the recommendation of some of his followers; others opposed 'Ali's decision and, as dissenters, were leter referred to as the Khawaarij.

> They proclaimed the nullity of 'Ali's claim to the Caliphate but equally condemned the conduct of 'Uthman, the third Caliph, who had been assasinated in an earlier revolt. They rose in revolt again and again during the Omayyad and the Abbasid periods, but were ultimately crushed.... They believed that it was the obligation of the believers to proclaim illegitimate and ipso facto deposed the Imam, who had gone off the right path. They declared, moreover, that every believer who was morally and religiously irreproachable, was eligible to the office of the Imam (Khan 1974:73-74).

The Ibadhis are more moderate in their beliefs than the Khawarij. Nevertheless their practice displays a conservative nature that considerably influenced the recent history of Oman (Peterson 1978:19). For example, they do not believe, as the Khawarij did, that their opponents among other Muslims are Mushrikeen (polytheists), but rather Kuffar, a term interpreted by Ibadhis to mean "ungrateful" for the good things that God has given them and not "disbelief" in God (Khan 1974:82). Marriage and inheritance from other Muslims is allowed and spoils taken from them in war is considered unlawful except for horses and arms (Ibid).

As with the Khawarij, the essence of the Ibadhi argument was that the third Caliph 'Uthman had betrayed the Muslim community with whose welfare he was entrusted; hence he was deposed at the will of the people (Wilkinson

1970:75). The function of the Ibadhi Imam is to serve the Muslim community according to the laws of the Quran and the sunna (the sayings and doings of the Prophet). If he fails it is the duty of the community to dissociate themselves from him, baraa'ah, and to withdraw their support, wilaayah (Wilkinson 1970:75). They also believe that in the time of persecution the community is allowed to go in a state of kitman (concealment) and the duty of electing an Imam is waived. If the community is threatened during the state of kitman, a state of difa' (defense) is declared and a temporary Imam ad-difaa' is elected. An Ibadhi is free to fight individually during the state of kitman. A state of zuhours (manifestation) is declared by religious elders when conditions become favorable for the open election of a new Imam (Khan 1974:82-83).

4. The Development of the Ibadhi Imamate in Oman. Ibadhism was named after Abdullah bin Ibadh, who dissociated himself from the Azariqa, an extreme Khawarij sect, in the first century A.H., and remained in Basra (Iraq) in a state of kitman, waiting for better times to come (Khan 1974:83). After his death, Abu al-Shatha Jabir bin Zaid al-Azdi from Nizwa, Oman, became the leader of the Ibadhiya of Basra. He and his followers were banished by the Ommayads to Oman, and a year before the overthrow of the Ommayad dynasty by the Abbasids in 750, Julana bin Mas'ud was elected as the first Ibadhi Imam in Oman (Khan 1974:84). He was later killed by the Abbasids.

> The development of Ibadism as an integral part of the Omani national culture was complemented by the super imposition of the religious and political institution of the Imam on the tribal base of Omani society. The Imam's election, under a concept of double bay'a or 'aqd (contract), reflected the method of choosing tribal Shaikhs, as did the provision allowing the office of Imam to remain in abeyance when necessary. The small Ibadi state, surrounded by an often hostile world of sunni Muslims and non-Muslims, assumed a defensive posture which combined with Oman's geography to influence the isolationist tendency of Omani politics and history. As a result, Oman has always looked inward to the ideals of the Ibadi state with its cultural and political center at Nizwa. The Omani state reached its classical zenith under the First Imamate of the ninth century, which was later to serve as a prime example of an ideal Ibadi state (Peterson 1978:20).

Wilkinson agrees with Peterson's comments on the First Imamate.

> This imamate, whose hayday may be considered the ninth century A.D., was in many ways Oman's golden age. Whilst the period of rule by the Ya'aribah imams in the seventeenth century rivals, if not surpasses, it in political power and wealth the First Imamate, even allowing for idealizing through the passing of time, represents the nearest a true Ibadi community has ever been established in Oman (1970:76-77).

The First Imamate was established in Nizwa in the Interior of Oman in the ninth century A.D., first century A.H. Up to the seventeenth century A.D. the different coastal interests of Oman never clashed with those of the Imamate because the coastal towns remained to a large extent under foreign control: Omayyad, Abbasid, Iranian, Portuguese. Conflicts between the coast and the Interior started around 1649 when the Portuguese were ousted from the coastal Muscat-Oman (Khan 1974:53). For the first time, the Ya'ariba, who were the major force behind removing the Portuguese from Oman, united the country under one Imamate. The commercial and political interests of the new Ya'rubi Imams ultimately clashed with the medieval view of the orthodox Ibadhi Imamate. The first Ibadhi principle to suffer was the elective principle; the Imamate became a hereditary affair and the ruling Imams became puppets in the hands of the coastal merchants. Some of the Imams themselves became big

ship-owning businessmen (Khan 1974:55). "Ultimately, Imamate became a strong-hold of 'moderate' Ibadhism, and the conservative influence declined.... The fundamentalists clashed with the moderates in 1920's and the situation was complicated by the famous tribal civil war between the Hinnawi and the Ghafiri factions. Finally, the desparate Imam invited Nadir Shah of Iran for help who occupied Oman, and the Ya'aribah dynasty ended" (Ibid).

5. The Ghafiri/Hinnawi Factions. A series of civil wars took place in Oman in the first half of the eighteenth century. They were fought over the succession to the Ibadhi Imamate. Two major Omani tribes, Bani Hinna and Bani Ghafir were at the head of the wars. Eventually most of the Omani tribes became involved and they tended to align themselves on Ghafiri and Hinnawi lines. Kelly believes that this factionalism in the eighteenth century among Omani tribes merely reflected a division in Omani society that went back to the pre-Islamic period between the Qahtani (Yemeni) and 'Adnani (Nizari) tribes. For, Kelly believes, as a rule the Qahtani tribes aligned themselves with Bani Hinna and the 'Adnani tribes with Bani Ghafir. Kelly also beleives that the tribal factionalism further reflects the religious sectorianism existing in Oman between Sunnis and Ibadis since according to him most Hinnawis are Ibadhis and most Ghafiris are Sunnis (Kelly 1970:107).

Khan makes the same type of observation. Although he agrees there are lots of exceptions to the rule, he states that there is a tendency for the Qahtani, Ibadhi, Hinnawi divisions to fall together against the 'Adnani, Sunni and Ghafiri ones. But how valid is a rule that applies to a few cases only? Khan cites S. B. Miles as listing 118 tribes in Oman, of which 30 are major tribes whose populations range between 5,000 to 30,000 each. Only a

few of the major tribes fall neatly in the above three-fold division: six tribes with a total population of 70,000 are Qahtani/Ibadhi/Hinnawi. None of the major tribes listed are 'Adnani/Sunni/Ghafiri. Fourteen of the major tribes with a total population of 189,000 are Ibadhi but not necessarily Qahtani or Hinnawi, and seven of them, with a population of 81,000, are Sunnis. Two major tribes with a population of 26,000 are divided among the Ibadhi and Sunni sects. The religious affiliation of two major tribes with a population of 19,000 is unknown. Accordingly, among the major tribes, Ibadhis total 259,000 as against 71,000 Sunnis (Khan 1974:90). Among the 118 major and minor tribes that Miles listed 61 were Ibadhis, 27 Sunnis, 5 mixed, and 24 unidentified. Khan tells us that a more recent source identified 24 tribes with a total population of 230,000 as Ibadhis, nine tribes with a total population of 51,000 as Sunnis, and three tribes with a total population of 36,000 as mixed, but unfortunately he does not identify the source (Ibid).

6. The Al Bu Sa'id Imamate and Sultanate. The civil war between the Ghafiri and the Hinnawi factions lasted for over a quarter of a century, long after the leaders themselves had been killed. The civil war resulted in the downfall of the Ya'rubi dynasty, and the Persian occupation of Omani ports (Peterson 1978:20). However, Ahmed bin Sa'id, the wali (governor) of Sohar successfully resisted the Persian siege and managed to drive them away from Muscat. He was elected the new Imam in 1749 with strong Hinnawi and Ghafiri support. Like the Ya'aribah Imams before him,

Ahmad bin Sa'id drew much of his support from coastal Oman (Kelly 1970:108). Ahmad was originally a merchant in the port of Sohar. Thus, as an Imam he tried to unify

> the moderate (i.e. commercial) and conservative (i.e. the fundamentalists) wings of Ibadhism but hardly succeeded. His Imamship did not deter him from pursuing his commercial interests.... He pursued his dynastic tendencies by giving each of his sons the title of 'Sayyid' (lord). However the conservative resentment which was accumulating for long exploded into violent revolt in 1784 after his death, against his son Sa'id who had become the 'Imam' (Khan 1974:55).

Three years after Sa'id came to power, his son Hamad took control of much of the country and established his capital in Muscat. Sultan bin Ahmad, Hamad's uncle, took over in 1797, upon the latter's death; a year later he entered into an agreement with his brothers Sa'id and Qais by the terms of which the Sultan retained Muscat, Sa'id remained an Imam at Rustaq and Qais as a wali of Sohar (Ibid). Like Hamad before him, Sultan made no effort to install himself as an Imam to replace his brother Sa'id but was content to rule Muscat with the title of 'Sayyid' (lord) (Ibid:109).

Sultan was succeeded by his nephew Badr bin Saif. Badr was quickly murdered by Sultan's son Sa'id who assumed Badr's position in 1806. Neither Badr nor Sa'id bin Sultan attempted to depose their uncle Sa'id, the Imam of Oman or to assume his title. "Sa'id ibn Ahmad lived on undistrubed at Rastaq until his death, c. 1821, when the Ibadiya of Oman were left, for the first time in many generations, not only without an imam but without a candidate in sight" (Ibid). Oman remained without an Imam for nearly half a century.

7. The Restoration of the Imamate. There were two major attempts to revive the Imamate in the nineteenth century. The first attempt took place in 1864 and was a failure. The second attempt was undertaken by 'Azzan ibn Qais, also fo the Al Bu Sa'id, in 1868; 'Azzan was declared as Imam. His Imamate, however, collapsed in a few years due to British support of the Sultan.

The Omani Ibadhis were not happy with the then present state of affairs. There was discomfort among the population. They saw Oman as becoming more and more under British Control and many felt that the restoration of the Imamate was the only way of changing the course of events. This led to a revolt instigated by men like Shaikh Abdullah bin Humayd al-Salimi, a blind religious scholar who later wrote a history of the Imamate in Oman, Shaikh Isa bin Saleh, the tamimah (chief) of the Hinnawi tribe and Shaikh Himyar bin Naasir al-Nabhani, the tamimah of the Ghafiri tribe, and to the election of Shaikh Salim bin al-Kharusi as Imam in 1913 (Kelly 1970:118-119; Khan 1974:57). A month later a Hinnawi/Ghafiri Imamate force moved to Nizwa, deposed the Sultan's appointed wali (governor) and restored the city as the seat of the Imamate (Kelly 1970:119). The ruling Sultan was declared deposed. The Imamate army attacked Muscat but was defeated. Al-Kharusi was murdered in July 1920 and Shaikh Mohammad bin Abdullah al-Khalili was elected as the new Imam. Through the mediation of British officers, the treaty of Sib was concluded between the Imam and the Sultan. From there after, Imam al-Khalili ruled the Interior uninterruptedly until

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he died in May 1954. He was followed by Ghalib ibn 'Ali, despite the fact that Sultan Sa'id bin Taimour himself presented himself as a candidate (Khan 1974:57). Ghalib's election was not acceptable to the Sultan who sent his army to attack the Interior of Oman to assert the Al Bu Sa'id power there. Nizwa was captured by the Sultan's army in December 1955. The Sultan stated that

> the new Imam had violated the Treaty of Sib by conspiring with the Saudis to create a completely sovereign Imamate 'which would inevitably be the creature of the Saudi regime.' Two connected developments had taken place before this event. Oil had been discovered in Saudi Arabia and concession had also been given in the interior Oman to foreign companies by the Sultan who did not care much that was under the Imam's jurisdiction, and that this had been resented by the tribes.... Moreover, the Imam had forwarded a request to the Arab League for full membership.... (Ibid:58).

After the capture of Nizwa Imam Ghalib made his peace with Sultan Sai'd but his brother Talib fled to Dammam in Saudi Arabia where he established his headquarters. Later he moved to Cairo and established an "Imamate of Oman Office." In 1957 with the help of his brother Ghalib and Suleiman, another supporter, Talib managed to reenter Oman with an Omani Liberation Army, trained in Saudi Arabia, and reactiviated the Imamate. This did not last for too long since they were defeated by the Sultan's army, with the help of the British. In 1959, Talib, Ghalib, Suleiman and their followers fled to Dammam where in recent decades they

have lived in quiet exile.

WOMEN

The large corpus of writings on Oman reveals very little about women and their contemporary socio-economic and political roles in the household, the settlement, and the larger society.[41] The paucity of information on the sexual division of labor is especially unfortunate; given the overwhelming prominence of males in the labor migration, women would appear to be left as de facto managers of productive activities in much of the rural areas. Yet little information on this phenomenon can be found. Rectifying these lacunae should be a prime consideration of any socio-institutional field inquiry in the Sultanate.

The available literature on Omani society tends to treat women at a most superficial level without analysis. Wendell Phillips, for example, summarizes the sexual division of labor as follows: "In terms of personality, of economics, of politics and of civics, there are no women in Oman; women exist in number always greater than men, but their existence is domestic and servile only" (1966:128). On the other hand, he seems to claim that a woman's economic activity may translate into greater personal freedom:

> Moreover, and curiously enough, the existence of a desert women may be less oppressive, freer, than that of her urban sister, if only because of the greater need for her active services in the work of the community, but also because of the greater freedom with which marriage and divorce are contracted; a desert woman may, in her time, have half a dozen husbands (Ibid).

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[41] Unni Wikan's book on Omani women was not available at the time that this text was written. We are informed by the editor for social sciences that the work considers women in general, and does not focus exclusively on transsexualism. We have also been unable to obtain an article dealing with women by Salley E. Letts and J. S. Birks, which appeared in the Journal of Gulf and Arabian Studies, 1977.

There is some fleeting material on such aspects of women's lives as dress, marriage, and divorce. Clements (1980) observes that the majority of Omani women are unveiled. Wikan, on the other hand, insists on the sexual segregation of Omani society and on the modesty of women as expressed in seclusion and in clothing that covers the entire body but for the hands, feet, and face, even of little girls, and completes the veiling of the fact with a black mask, burga, when a girl reaches 13 years of age. Wikan claims that the veil is lowered only in the presence of other women or with close male relatives, such as a father, son, brother, or husband (1977).

Clements and Phillips comment on marriage, though the comments are general, rather than specific to a particular community, class, ethnic unit or occupational group. Phillips dwells on the marriage of girls as soon as they reach puberty, sometimes as young as 10-11 years of age. Marriages are arranged by the father without consultation with the bride, and almost always to much older men. To Phillips, there is no future for Omani women outside of marriage, the girl substituting deference to her husband for deference to her father. Both Clements and Phillips refer to patrilineal cousin marriage, the right of the father's brother's son to the girl. They deal briefly with the three stages of marriage: (1) the asking; (2) the commitment, which stipulates the mahr or brideprice; and (3) the completion of the contract before a religious judge, the qadi. Clements notes

that Sultan Qaboos has reduced the amount of the mahr to RO 300, whereas it earlier may have been as much as RO 1,500. Clements further observes that although polygyny is legal, and up to four wives permissible, most Omani marriages are monogamous.

One of the major changes introduced by Sultan Qaboos after 1970 has been the entry of women into the urban/public sector labor force. The Sultan decreed that all radio and television announcers would be women, and as late as 1976 women were still prominent in that field (Nyrop et al 1977). Women were employed in banking, in the civil and foreign service, in the military and in the police. In 1976 the Director of General Education was a woman, and Oman was represented by three women -- two from the Ministry of Foreign Affairs and one from the Ministry of Education -- at the 1975 World Conference on International Women's Year in Mexico City.

Some information on women may be teased out of the literature on pastoralism. According to Dostal (1975), women of the al-Qara tribe are forbidden to milk cattle, though they have sole responsibility for the conversion of milk into butter (mashh), clarified butter (kheb) and cheese (gothi). Qara women also plait mats, tan hides, and make pottery.

Birks (1976; 1976a) has some tantalizing but undeveloped remarks on the expanded role of women due to the migration of pastoral men to labor markets outside Oman. With men absent, women have started taking a more active part in household and village economies, although not, apparently, in animal husbandry itself, which has declined as the economic basis of some formerly herding societies. Women have become more active in irrigated farming and in date harvesting. Birks suggests but does not elaborate on the likely emancipation of women due to male absenteeism. Perhaps the most

extreme example of their larger role is their carrying the bier at funerals, previously exclusively a male preserve" (Ibid: 1976:85).

In their studies of labor migration, Birks and Sinclair (1978) note that although the movement is dominated by males there are some females. Of 2,511 migrants counted, 264 (10.5%) are female. Their patterns of movement and destinations are quite different from those of the males, however. Migration for employment purposes is almost non-existent. The women visited relatives, in the company of their fathers or husbands, or, in a few cases, travelled for medical or educational purposes. Of the 264 women counted, only one was employed, an office worker. Some women accompanied their husbands on labor migration; the easier the access and the closer the distance the larger the number of women who accompanied the men. If the distance was so short that the men were able to return to their homes monthly, the women stayed behind.

PUBLIC ADMINISTRATION

The rapid expansion of the Oman Government and administrative apparatus since 1970 is well documented. Several writers have characterized the transition from Sultan Sa'id's administration to the present one as nothing short of dramatic. Inheriting little administrative structure and very few trained personnel, Sultan Qaboos designed almost from scratch a government structure to carry out his extensive programs and defense and development. A thorough account of the detailed process of Qaboos' organization of the government is presented in John Townsend's Oman: The Making of a Modern State. The author cites the merits of many individuals but candidly points out the weaknesses, failures and trial-by-error processes through which the foundations of the present Omani government were laid. While this volume appears to contain much valuable information it clearly reflects the individual views of the author. Many of his claims have as yet to be verified or confirmed by either Omani or independent observers. As this work lacks adequate evaluation the author's conclusions should be subject to close critical evaluation.

John Peterson's Oman in the Twentieth Century: Political Foundations of an Emerging State is also a very detailed description and analysis of the development of administration in Oman, but his emphasis is on the period prior to the accession to power of Qaboos and on the historical relationships between tribe and state, the Imamate and the Sultanate. Some of the major points are summarized in his article "Tribes and Politics of Eastern Arabia" (1977). Additional sources include more general works such as F. A. Clements' Oman the Reborn Land (1980) and the Area Handbook for the Persian Gulf (Nyrop et al 1977).

1. Public Administration under Sultan Sa'id bin Taimur (1932-1970). Sultan Sai'd's government may be described as unique and unparalleled in either Oman or the whole of the Arab World. He personally assumed the burden of much of the functioning of the government including drafting of documents, negotiating payment of the debts of his father, Sultan Taimur bin Faisal, and achieving a balanced budget for Oman. His perception of needs, and thus the needs of the government, was minimal. He did spend some money on his army, a unit of Baluch mercenaries, which was more of a royal guard than a national defense force. Sultan Sa'id's civil expenditures have been summarized as follows: "He covered the salaries of a few walis (regional governors), each of whom would have a few soldiers and a clerk on his staff, the customs department, and a few officials and clerks of the central government" (Townsend 1977:57). To this staff he later added a Ministry of the Interior to supervise the walis, a Personal Advisor and a Military Secretary, both of whom were British. In 1958 the British expanded his administration by adding a Development Department headed by a Development Secretary, but this institution was funded directly from the United Kingdom and not from the Sultan's budget. Ater the realization of oil revenues, two additional British administrators were appointed in 1967: the Secretary for Financial Affairs and the Secretary for Petroleum Affairs.

Local communities largely managed their affairs through tribal authorities and crime was infrequent. Tribal shaykhs relied upon dispute settlement through consensus among tribal members. In case of intra-tribal dispute, the local wali, as the representative of the Sultan, would be consulted and he would attempt to reach a consensus. His decision would be recorded by the qadi who accompanied him during hearings. If the matter required an interpretation of religious law the qadi would provide that ruling. Neither walis nor qadis

were members of the local tribes nor even natives to the districts in which they administered justice (Ibid:58). Walis were usually members of the ruling al Bu Sa'id tribe and often relatives of the Sultan. They were chosen and given posts carefully in order to preserve impartiality and to remain aloof from local political pressures. Al Bu sa'id walis owned their first allegiance to their tribe and hence to the Sultan.

Qadis attained their posts through the demonstration of a high level of religious scholarship which gained them recognition and credibility among the public. Those in religious offices owed their first allegiance to the shari'a (religious law) and thus they too were believed to be above local political pressures. If a case could not be locally resolved it could then be referred to Muscat where the Minister of the Interior would hear it. The Minister, himself a relative of the Sultan, would bring the case to the Sultan if he could not himself make a ruling. The process was long, and in fact could take years, and there was no right of appeal. Members of non-Omani minority groups in Matrah and Muscat decided their cases amongst themselves. If they could not reach a decision the dispute could be taken to be heard before a chief qadi and other senior qadis in Muscat. If undecided it would eventually be brought before the Sultan.

Towards the end of the reign of Sultan Sa'id the British-operated Development Department grew to employ 122 people, including the staff of the Development Secretary consisting of an Assistant Development Secretary, an accountant and two clerks. The Sultan's veto powers, however, prevented the Department from accomplishing very much. After the first oil exports in 1967, the Sultan considered a modest development program and a Development Board was established (Townsend 1977:69). A consulting architect was engaged to draw up development

plans and a Director of Public Works was appointed. In addition to the office of Development Secretary, two more British-staffed positions were created: Director of Development and the Secretary to the Development Board. The Sultan also appointed management consultants to advise on the coordination of these various offices. But this growth in the number of government officials placed a great burden upon the Sultan's administrative organization. He continued to make nearly all government decisions personally and declined to delegate authority. The person closest to him whose advice he sought was the Managing Director of Petroleum Development (Oman) Ltd., who was not a member of his government staff. He and a few other trusted friends in business were the Sultan's closest confidants.

2. Public Administration under Sultan Qaboos (1970 to present). Sultan Qaboos suceeded his father in office and established a very different government administration, one capable of carrying out development programs, engaging in foreign policy matters, and managing state oil revenues. Nevertheless, he retained for himself the full authority of his father's position as an absolute ruler. He also stressed traditional Omani values, and his development objectives were formulated with these values in mind, although he has favored a moderate rate of social progress. Assuming full control of all government apparatus in 1970, Sultan Qaboos soon delegated authority and expanded government administration while continuing to accept full personal control of all matters pertaining to finance, defense and foreign affairs.

Under Sultan Sa'id bin Taimur, the Ministry of the Interior managed a network of regional administration under approximately forty walis. When the new regime was installed the former Minister resigned and two new

Ministers were appointed, a Minister of the Interior to supervise the walis and a Minister of Justice to supervise the qadis. To avoid tribal jealousies, the mean were chosen from the Sultan's family. An institution that was essentially carried over into the new government was the Customs Department.

Tariq Bin Taimur, the Sultan's uncle, was appointed Prime Minister and assisted Qaboos in selecting ministers and in determining the basic structure of the government. He created the temporary Interim Council and recruited expatriate Omanis for government positions. In 1970 the Interior Council gave primary consideration to the establishment of a professional civil service, and of a permanent office of the Prime Minister. The former called for a department to oversee job grading and evaluation and eventually the development of coordianted training programs, a civil service institute responsible for clerical and administrative training in Oman, and the use of multilateral and bilateral aid sources for overseas training of higher staff. While these proposals were eventually acted upon, Tariq bin Taimur himself did not remain long in office. He resigned on January 1, 1972 and Sultan Qaboos became the prime minister.

The Sultan quickly appointed Ministers for Health, Education, Labor and Economy. The first two of these ministries, along with the later Department of Agriculture and Ministry of Public Works, emerged from the old Development Department. During the early years of Qaboos' reign, government suffered from inexperience and the lack of qualified candidates for many positions. According to Townsend, these first ministerial appointments "suffered from a lack of a clearly defined role, lack of any

form of statement of government policy and intention, lack of definition of the authority of ministers, particularly in finance matters, lack of trained and qualified professional and administrative staff, lack of leadership, lack of co-ordination" (1977:125).

Recruitment for high level government positions was drawn from six major groups (Peter 1978:208): (1) close members of the ruling family with portfolios according to their rank and rather than their qualifications; (2) the traditional al Bu Sa'id[42] "civil servants", who long served as walis and private secretaries, were given posts in ministries and the diwan; (3) members of the tribal "establishment" who, as representatives of the Interior were given posts to integrate the traditional power structure into the new regime; (4) individuals with personal allegiances to the Sultan who had been in the service of his father; (5) Arab Omani merchants with business ability; and (6) others who came to the attention of the Sultan and his advisors other than through these traditional channels. Many persons who might have served the government, however, were excluded. Expatriate Omanis from Zanzibar were generally well-educated but often spoke no Arabic.

Shortly after appointing the first ministerial positions, the Sultan began to meet with them informally and on an ad hoc basis. As these meetings gradually become more regular they came to be know as the meetings of the Council of Ministers. They remained informal, however, and without agenda. The Sultan, if absent, would ratify the decisions of the Council.

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[42] The ruling family since 1744.

At this stage decision-making was unaccompanied by a review process and commitments to projects were sometimes made without sufficient consideration of their financial implications. As defense and security were the domain solely of the Sultan, ministerial decisions were isolated from those matters. With the creation of new decrees some confusion arose with earlier legislation.

In 1974 the cabinet was reorganized and new ministries were created. Throughout the 1970s the Council of Ministers gradually acquired its own authority and, aside from matters of finance, defense and foreign affairs it became increasingly effective in decision-making. The Sultan has relinquished some of the traditional power of his office in delegating authority to his ministers. With regard to finance, the ministers have obtained freedom to allocate their budgets and the system of public annual published budgets enables them to have access to financial information.

Agencies which were created outside the ministerial framework included the Dhofar Administration, the Royal Omani Police and the Oman Currency Board. The Diwan, or traditional Sultan's Palace Secretariat, was an office which concerned itself with protocal, ministerial meetings, petitions and complaints, government personnel and other general matters. In handling petitions and complaints, it became a buffer between the Sultan and the people, but the tradition of petitioning the ruler has been retained. In 1973 a Civil Service Department was established as part of the Diwan with the

advice of a United Nations personnel administration expert. It has been slow to develop, however, partly because of scarcity of experienced civil servants. A disagreement over the delegation of authority in 1975 nearly led to the demise of the Department, as ministers attempted to retain the oligarchic system of power (Townsend 1977:155). But the Sultan has remained committed to an independent civil service and reated the Civil Service Law and the Public Administration Institute to promote its development. The Institute trains Omanis for clerical and administrative civil service posts. In the early years of government, the Sultan also engaged non-cabinet British and other expatriate personnel, who advised in various capacities. Except those serving as military personnel these individuals had no officially recognized role other than as "advisors" to the government.

The Sultan chaired a number of key councils, including that of National Defense. This body, formed in 1973, included, among others, the Governor of Dhofar and British advisors. In contrast with the early development of the Council of Ministers, its meetings are formal and follow an organized agenda. Three new councils were created in 1974: Finance, Development, and Natural Gas and Petroleum, all of which were chaired by the Sultan. The Vice-Chairman of the Finance Council was free to act in the absence of the Sultan, giving him a very powerful position, but the Sultan continued to hold the portfolio of Finance. This Council imposed overall control on ministerial spending. The Natural Gas and Petroleum Council was initially a mixed council of Omanis and expatriates, but because of tensions and conflicts it became a fully Omani board.

Sultan Qaboos continues at present to hold the office of Prime Minister and the portfolios of Defense, Foreign Affairs and Finance. The other key offices of his government include the Deputy Prime Minister for Security and Defense; Deputy Prime Minister for Legal Affairs; Special Advisor to the Sultan; Governor of Muscat; Minister of State for Foreign Affairs; Minister of State; Governor of Dhofar; Special Advisor to the Sultan on Religious and Historical Affairs. Other ministerial portfolios include Interior; Justice; Post, Telegraphs and Telephones; Electricity and Water; Communications (Civil Aviation, Roads, and Ports); Commerce and Industry; Petroleum and Mineral Resources; Agriculture and Fisheries; Education; Awqaf (Religious Endowments) and Islamic Affairs; Social Affairs and Labor; Land Affairs and Municipalities; Information and Youth Affairs; Public Works; National Heritage and Culture; and Diwan Affairs. Undersecretaries have the following appointments: Defense; Foreign Affairs; Justice; Diwan Affairs; Finance; Education; Commerce and Industry; Agriculture and Fisheries; Petroleum and Mineral Resources; Health; Land Affairs; Municipalities; Communications; Social Affairs and Labor; Electricity and Water; Awqaf (Religious Endowments) and Islamic Affairs; and Public Works.

The Council of Ministers remains the highest executive authority and is collectively responsible to the Sultan. The other administrative offices which are directly responsible to the Sultan include the Deputy Prime Minister for Defense and Security, the Deputy Prime Minister for Legal Affairs, the Specialized Councils and the Capital Governate. Recently added to this list has been the State Consultative Council which held its first session on November 3, 1981. This forty-five member Council has been described as the

"Sultan's first parliament" and fulfills the Sultan's 1980 promise to increase public participation in government. Its membership is divided among seven government officials, individuals from the Capital Area, and Regional members. The Council is intended to "provide the framework for a joint effort by the government and public to study development and fix priorities" (MEED Nov. 6, 1981:43). The Sultan will arbitrate cases where the Council's development advice conflicts with the view of the ministers.

3. Regional and Local Government. The Sultanate of Oman is organized into forty-one wilayats (administrative districts), one province and the Municipality of the Capital. The Municipality of the Capital includes the areas of Muscat, Matrah, Ruwi, Bashur and Sib, and is administered by the Governor of the Capital with the assistance of the Wali of Sib and the Sub-Wali at Bashur. The other forty wilayats are listed geographically in Table 4. Dhofar Province is administered by a Governor.

The wali, governor of a wilayat, is appointed by the Sultan either from among his own family or tribe or from a tribe without interests in the district in which the wali is to serve. The wali is responsible for representing the national government, acting upon directives from the Sultan or his ministers, arbitrating disputes and administering justice. In his judicial role the wali is assisted by a qadi (religious judge).

Newer forms of regional administration have been introduced in recent years and carefully integrated with the traditional distribution of power through the wali system. Larger towns have been granted the status of Municipality. In addition to the municipalities of the Capital Area (Muscat and Matrah) and Salalah, recognized by Sultan Qaboos in 1970, other towns

TABLE 4

1.	Khasab	Musandam	22.	Buraimi	Jau and Buraimi
2.	Bayah	"	23.	Muhdah	"
3.	Bukha	"			
			24.	Bahla	Oman Interior
4.	Barka	Batinah	25.	Nizwa	"
5.	Masnaa	"	26.	Manah	"
6.	Suwaiq	"	27.	Izki	"
7.	Khabura	"	28.	Adam	"
8.	Saham	"	29.	Sumail	"
9.	Sohar	"	30.	Bid Bid	"
10.	Liwa	"			
11.	Shinas	"	31.	Mudaibi	Sharqiya
			32.	Ibra	"
12.	Nakhl and Wadi Maawil	Western Hajar	33.	Qabil	"
			34.	Biddiyah	"
13.	Rostaq	"			
14.	Awabi	"	35.	Bilad Bani Bu Hasan	Jaalan and Sur
15.	Wadi Bani Khalid	Eastern Hajar	36.	Kamil and Wafi	"
16.	Quriyat	"			
17.	Wadi Dima	"	37.	Bilad Bani Bu Ali	"
18.	Dank	Dhahirah	38.	Sur	"
19.	Ibri	"	39.	Masirah	"
20.	Yanqal	"			
21.	Hamra	"	40.	Dhofar	Southern

Source: Sultanate of Oman. 1979.

From: Speece, M. 1981. Draft Environmental Profile of the Sultanate of Oman.

and large villages have also set up municipalities, among them Nizwa, Sohar, Sur and Suma'il. Municipal Councils were established in each of these towns and at first members were appointed from the capital. Businessmen are usually nominated and their function as a Council is principally the management of public sanitation and oversight of the market. Since 1973, the

Councils have been allocated government funds and these, combined with local license fees, constitute their budget.

The presence of a Municipal Council does not alter the status of the wali as the representative of the Sultan. In principle, actions of the Councils are carried out with the consent of the wali. Townsend believes that the walis have welcomed the appointment of Councils as a way of integrating themselves into the local community and displacing criticism previously directed to them over the lack of public sanitation programs. The development of the Municipal Councils as institutions of local representation has served to cross-cut traditional tribal divisions and support the modern administrative objectives of the Sultan.

Tribal shaykhs have retained some power in the smaller villages and the remoter regions. They serve as local authorities in these areas and administer tribal law within the scope of their dar. In the absence of an accessible local wali, tribal shaykhs may go to Muscat to seek settlement of a grievance on behalf of a tribesman. This has been less frequent with the growth of regional administration. The few remaining tamimahs or paramount tribal shaykhs usually act in close consultation with the local wali. Through these leaders the wali can most effectively communicate with the often widely dispersed tribesmen. The wali's position as arbitrator of intra-tribal disputes and his representation of tribal needs to the central government have been the basis for tribal recognition of his authority.

4. Administration of Justice. The Omani legal system is based on the Ibadhi interpretation of the shari'a or Islamic religious law. The Ibadhis recognize the Quran and the Sunna (traditions of the early Caliphs and the legal decisions of the Prophet Mohammed) as the principal sources of the law. Qadis, or religious judges, administer shari'a locally. Before the modern civil and criminal law of Oman was established, the qadis ruled on all cases brought before them. Today they rule on cases dealing with specific questions of interpretation of the shari'a. Each wali is assigned a qadi or several qadis depending on the size of his region and cases are usually heard before both the qadi and wali. If a case cannot be locally resolved or if the party wishes to appeal a ruling it may be heard in the appeals court in Muscat. This court is presided over by four chief qadis of equal rank. In rare cases a direct appeal may be presented to the Sultan. The qadis administer shari'a law for all Moslems of the Sunni and Ibadhi sects in Oman. Shi'ite Omanis manage their own judicial affairs. There have been no Omani Jews during this century, and the small Christian population consists wholly of foreigners.

Tribesmen who wish to settle disputes internally may have their cases heard before the tribaly shaykh who administers tribal or customary law ('urf) on the basis of consensus among responsible adult males.

Legislation may come into being through the decree of the Sultan and may be formulated with or without consultation with others. These decrees are founded upon shari'a but deal with contemporary situations for which shari'a has no precedents.

Since 1977 Oman has had a dual legal system. In that year civil and criminal courts were opened. These courts were designed to deal largely with

legal matters involving the modern sector: traffic violations, commercial codes, labor regulations, etc. All qadis, however, are bound to shari'a interpretations and cannot make rulings based on any other code. Thus while the new laws have been drafted and the courts established there is still no independent judiciary to enforce and interpret them.

Petty offenses may be referred to a special court established specifically for such matters. They are occasionally tried before the Governor of Muscat, and the police are also entrusted with adjudication as well as being the primary body of law enforcement. The police exercise judgment over offenses and appeal is difficult. The Sultan is the only resource for appeal but the Chief of Police, who is also responsible for internal security in northern Oman, is by virtue of his office very close to the Sultan. Both Omanis and foreigners may be imprisoned without formal charges being brought against them.

DEVELOPMENT

1. Regional Forces of Change. Development policies in Oman were initially formulated in the years 1967-1969 by Sultan Sa'id bin Taimur subsequent to Oman's first oil exports. These policies reflected the desire to compete in the world market and bring social and economic prosperity to the nation. Basic domestic infrastructure and oil marketing, storage and transport facilities were among the primary concerns of Oman and fundamental to its development of a sophisticated economy. However, the needs of the people of Oman in terms of social services and rural development are not restricted to the need for modernal medical and educational facilities. Some major basic changes have affected all of Arabia in the last century and the rapidity of these regional changes has challenged the viability of traditional life styles and means of livelihood through much of the peninsula.

The rural subsistence economies can no longer function as they did in the past. Labor migration has been discussed above as a result of increased opportunities abroad and in the commercially developing areas of Oman. The underlying factor is the lack of opportunity within the rural sector. The major regional changes which have affected the village economy seem to be rooted in the regional economic and geo-political developments within Arabia as a whole -- particularly in terms of mechanization. The tendency has been for planners to view the oasis settlement as an isolated unit and not as an integral economic node within a regional network of interacting, interdependent societies of pastoralists and cultivators.

The "ecological trilogy" as a model through which to view the societies of the Middle East provides a compartmentalized perspective in which townspeople, cultivators and pastoralists presumably each occupy a different cultural-ecological-subsistence zone. This approach has led researchers to interpret these three classifications as distinct, though interdependent, social economic units (English 1973). A more realistic alternative is the view of the oasis settlement as a socio-economic focal point for interaction amongst people whose habitats and subsistence economies range along a continuum from fully pastoral and/or nomadic to fully sedentary cultivators. This perspective illustrates that many people engage in mixed economies combining the activities of pastoralism and cultivation and perhaps craft production as well. These subsistence patterns are integrated around the oasis center which, as central places, combine to form larger trading networks. The impact of change in markets affecting pastoral production, agricultural production or seasonal labor opportunities affect as well the entire rural socio-economic structure.

The demand for products of subsistence economies has been collapsing over the last century with the introduction of alternative products and rapidly changing attitudes. The demand for camels has fallen off abruptly with the introduction of motorized transport (Peppelenbosch 1968:342; and Wilkinson 1978:31 and 1980:122). Camel breeding and trading were the principal foundations of bedu economy. Camels were in demand historically as animals of transport throughout Arabia but motorized transport has greatly reduced the market demand for camels and erroded the economic base of pastoral nomadism.

Date palm cultivation continues in Oman but the date market in Arabia has generally been falling (Stevens and Cresswell 1972:194 and Wilkinson 1978:17 and 1980:122). As the bedu camel, the date palm has been the capital investment of the agriculturalists and the secondary investment of many shawawi populations. Both are very well adapted to the desert environment. Supplemented with animal produce and grain it is dietarily sufficient as a staple food. There is still some demand for high quality dates on the external market but the average quality dates have little marketability. With imported foodstuffs becoming available at affordable prices, domestic consumption patterns are changing. Although in Oman date consumption remains fairly high, the imported foods are becoming in reasingly popular (Birks 1976:13) and dietary patterns are changing (Stevens and Cresswell 1972:195).[43] . The spread of palm disease and the withdrawal of rural labor have caused a further decline in the quality and quantity of the palms. In critical situations the tendency is for large landholders to allow the irrigation systems to decline and the palms to die as they now have the option to invest in alternative enterprises. This has produced severe strains on the poorer villagers who must obtain a date harvest sufficient for survival from year to year.

Seasonal migrations of some rural Omanis to the pearl banks of the Trucial Coast provided a supplement to rural subsistence income at the turn of the century. The sudden collapse of this industry occurred in 1929 with a decline in the market demand and volume of pearl trading on the international market. In addition to terminating a traditional source of income

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[43] This is particularly true of areas where rapid urbanization has led to declining rural populations.

for migrant Omanis the bedu tribes also felt the effects when their protection payments were no longer forthcoming fro the shaykhs of the Trucial Coast. Bedu raids increased as the tribes of Oman and Trucial Oman ('Awamr, Manasir and Bani Qitab) raided and attacked the coastal settlements (Abdullah 1975:170).

The introduction of motorized transport into Oman and the rest of the Arabian Peninsula opened up communications but even more significantly altered the political situation in inner Oman (Melamid 1962:122). This is best illustrated by the use of vehicles and aircraft in the British assisted overthrow of the Imam of Oman by the Sultan of Muscat and Oman (Sultan Sa'id bin Taimur) in 1955. But local warfare and inter-tribal violence seem to have subsided considerably as well. Vehicles brought central government closer to the tribal interior and policy decisions made in the coastal capital began directly to affect the lives of the interior peoples. As noted above, the fall of the camel market meant the fall of the base of the bedu economy. With the expansion of centralized political authority the bedu lost their other sources of livelihood: village protection tribute and/or village raiding.[44]

The discovery of natural oil resources has had a number of effects including the establishment of political boundaries and the abandonment of the concept of neutral areas. Negotiations were undertaken to establish definite boundaries between Saudi Arabia, Trucial Oman (the United Arab Emirates), and the Sultanate of Muscat and Oman. With land values rising

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[44] Smuggling has long characterized many nomadic societies and may be a source of income for some Omani bedu.

and competition for oil resources, the oasis at Buraimi became the object of a long and bitter dispute among these three political entities. Some boundaries remain undefined at present but for the most part the claims to oil resources are mutually acknowledged and drilling has been active. For the bedu dar the question of grazing rights has been an issue in instances of international boundary recognition but more importantly their claims to territories are much more crucial because of oil resources. The bedu have exercised their right to profit from oil exploration. The tribal shaykhs now act as labor brokers for the petroleum industry and profit from commissions forwarded by the employees (Heard-Bey 1972:314).

These historical developments combined with the recent availability of imported technology have led to changing patterns of resource exploitation and communication. Wilkinson argues (1978) that the rapidity of the latter has been a major factor in the development of mechanized but less productive farming systems. He asserts that the tribal economic and territorial organization of the nomads has in the past exploited mobility through tribal social structure and served to bind the settlements together in a local economy. New inputs, however, have caused a disequilibrium in oasis production (Ibid:7) and the isolation of oases through the breakdown of traditional specializations and organizations for exchange. The status of the rural settlements in present day Oman is a reflection of these regional changes in market demands, mobility and trade patterns coupled with the implementation of contemporary development programs and the unbalanced demographic profile which has resulted from labor migration.

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2. The History of Development Policies in Oman Prior to 1970. The reign of Sultan Sa'id bin Taimur has been almost universally acclaimed as backward, unprogressive and anti-technology. The Sultan enforced strict regulations prohibiting most foreigners and technological equipment from entering the country and he restricted the movement of Omanis out of the country by decree. But with the political unification of all of Oman (the Imamate of Oman was dissolved in 1955) and the discovery of oil it became apparent to Sultan Sa'id bin Taimur that Oman could begin development, as soon as the first oil revenues were in hand. His fear of debt limited his planning efforts but the process of commercial exploitation of Omani oil had a fortunate impact on the government for it enabled the Sultan to consolidate his administration (Clements 1980:56). Overtures for development began in 1958 with the organization of a British subsidized Development Department. This department began work on a few roads, two experimental farms[45] and a few medical centers. Despite British pressure to increase development to a larger scale as a means of insuring stability[46] the Sultan waited until 1967 when the first oil revenues were actually available for expenditure before making concrete long-range plans.

The explicit policy of the Sultan was that of cautious planning in such a way as to preserve Omani traditions. His personal approval of every detail of every development plan was necessary before any action could be

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45 Located at Sohar and Nizwa.

46 The Sultan's restrictions were particularly rigid in the province of Dhofar, his place of residence. He ruled this province as a fiefdom. This oppresive rule, lack of opportunity and development led to a revolt in the 1960s (Peterson 1978:188).

undertaken. Yet by 1969, ironically on the eve of his disposition, Sa'id bin Taimur had made a number of plans for development based on the new oil economy (Wace 1969). He had authorized proposals for harbor development in Matrah. This city he envisioned as Oman's future commercial center, with Muscat retaining its long standing role as a political administrative city. The thrust of his planning was concentrated on Muscat and Matrah and he had both of these cities mapped and surveyed to facilitate such projects as electricity extension, piped water, and construction. Private construction suggested by merchants and businessmen were approved. The Sultan solicited the advice of a firm of business consultants in planning the restructuring of the government.

Medical facilities were given some attention and eight hospitals were projected, construction of one at Nizwa was in progress in 1969. Road improvement was carried out and some development programs were formulated for the smaller cities. Modern education was one of the lower priorities of the Sultan's scheme as he featured its potential to interfere with the maintenance of traditional values. Nevertheless the need for education in the area of modern technical language led him to consider opening a second boy's school and a girl's school. In addition, some trades were being taught at the Oman Technical Trade School. The experimental farms, initiated under the British in 1958, were the locus of experimentation with the introduction of new fruit and vegetable varieties.

In terms of financial matters the Sultan had proposed currency reform and ordered the issue of Omani coinage, the Rial Saidi, which was to replace the multiple foreign currencies in use in Oman. Banking facilities were expanded and business transactions increased as did imports.

3. The History of Development Under Sultan Qaboos, 1970-1982. The history of development under Sultan Qaboos has been reviewed by Townsend (1977) and Clements (1980) and more briefly in Peterson (1978) and Cordes and Scholz (1980). Sectoral analyses are available for social services (health, education, bedouin, etc.), agriculture, industry, communications, natural resources, etc., in the Area Handbook for the Persian Gulf States (Nyrop et al 1977), Cordes (1980), Clements (1980), Birks and Sinclair (1980) and recent issues of Middle East Economic Digest (MEED) and the Middle East Annual Review.

Clements presents a factual chronology of development in Oman which car fully describes the new government's attempts to form administratively effective bodies for the implementation of development programs. His description traces the evolution of the administrative organization and reorganization of development as far as the 1975-6 institutions and policie including: (1) the Development Law of 1975; (2) the Five Year Development Plan; and (3) the Development Bank. All of these were optimistic and sophisticated programs which emerged in the mid-1970s.

Both Peterson and Townsend take a different approach in their analyses of the growth of the Omani government and its capacity in formulating and implementing development policy. Both Peterson's Oman in the Twentieth Century: Political Foundations of an Emerging State (1978), and Townsend's Oman: The Making of a Modern State (1977) were banned by the Omani government. Townsend was employed by the Omani government both with the former Sultan Sa'id bin Taimur and Sultan Qaboos. The latter appointment

provided the basis for his critical assessment of the post-1970 regime. While these works are dated, supplementary information concerning the structure is available in recent issues of the Middle East Economic Digest.

4. The Administration of Development Policies and Programs: 1970 to Present. Modern government, economic growth and internal development of social and economic infrastructure were the priorities of the new government formed by Sultan Qaboos. Qaboos, the son of Sultan Sa'id bin Taimur, took over the government of Oman in July of 1970, motivated by frustration over the lack of development in Oman. The major changes in government were in degree, efficiency and effectiveness, and the new administration's responses to needs were rapid.

In 1972 the Supreme Council for Economic Planning and Development was established with the Sultan as Chairman. This was a replacement of the old British organized Development Department. The Supreme Council was formed after it was demonstrated that the administrative structure of the Interim Planning Council was not suitable for serious development planning. Its purposes were to: (1) draw up a Five Year Plan for development; (2) stimultate investment in Oman; (3) encourage agriculture and fishing; (4) develop close ties with international agencies offering multilateral and bilateral aid; and (5) encourage Oman in a spirit of nation building (Townsend 1977:130-131). It carried both planning and executive functions. In 1972 the Supreme Council established the Center for Economic Planning and

Development which was to be a planning body subsidiary to the Supreme Council. The staff of the Supreme Council was largely non-Omani expatriates and its effectiveness was hampared by resentment among competing Omani council members.

The Center for Economic Planning and Development was responsible for coordination with United Nations development agencies and, as a planning organization, it promoted surveys of available water and mineral resources and of transport and housing needs. Internal resentment on the part of ministers who were not consulted in the decisions of the Supreme Council and over the presence of non-Omanis in such a high authoritative decision-making body, led to its collapse. The Center for Economic Planning and Development was then reshuffled into the General Development Organization and in 1973 took yet another form, the Ministry of Development. As a ministry, this body was less concerned with planning and more concerned with controlling the administration of contracts. It eventually became a catch-all ministry and in 1974 was split into: (1) the Ministry of Public Works; and (2) the Ministry of Petroleum, Minerals, Agriculture, and Fisheries.

With this action executive functions were separated from planning with the former becoming the responsibility of the specific ministry concerned. Planning activities were allocated by decree of the Sultan through the new Development Council on which he served as Chairman (he also assumed the chair of the Finance Council and the expatriate non-Omani staffed Natural Gas and Petroleum Council which were also established in 1974). The Under Secretary for Financial Affairs and various ministers also served as members and a Technical Secretariat assisted with the Council's administration and

the implementation of the resolutions taken by the Council. The Technical Secretariat is headed by a Secretary General and an Under Secretary for Planning (Cordes and Scholz 1980:51). Thus the ministries with clearly defined responsibilities and their own budgets could engage in development planning and the results would then be coordinated by the Development Council.

Another important aspect of the development program in 1974 was the World Bank Technical Assistance Development project in Oman. This consisted of three teams of international experts: (1) a planning team; (2) a highway administration team in the Ministry of Communications; and (3) an agricultural team in the Ministry of Agriculture, Fisheries, Petroleum and Minerals. One of the first results of the World Bank program was the formulation of a Development Law in 1975 (Townsend 1977:Appendix 3) in which the functions of the Development Council were clearly limited to planning and direction of economic development. The ministries and various departments were entrusted with responsibility of ensuring the economic viability of projects and planned consultancy studies. To achieve this the ministries involved in development projects set up offices in secondary towns from which to guide projects in the field. Furthermore, in addition to drawing up specific development plans each ministry has responsibility for assigning a staff member to follow through with implementation of Council decisions and to assist in the work of the Council.

The Development Council drew up the Five Year Development Plan as originally proposed in 1970. This new mode of long-range planning documentation covered the years 1976-1980. In summary form, it stated the following economic priorities:

1) To develop new sources of income to replace oil revenus.

2) To increase capital investment in the sectors of Manufacturing, Mining, Agriculture and Fisheries.

3) To ensure a wider geographical distribution of investment.

4) To develop existing areas of population but to ensure that they are not overburdened by mass immigration and that the environment is protected.

5) To concentrate on the development of water resources.

6) To develop the local human resources.

7) To continue development of the infrastructure.

8) To encourage trading activities.

9) To work towards the establishment of a free economy.

10) To improve the efficiency of the government administration (Clements 1980:74).

5. Development Prerequisites and Priorities. Oman as a late 19th and early 20th century trading and maritime power declined with the decline of the slave trade and improvements in shipping which meant boats no longer had to stop at Omani ports en route to or from the Arabian Gulf. With the reduction in trade, political struggles over Zanzibar, the Treaty of Sib, and the complexities of British interests in Oman and the Gulf area, Oman's economy contracted and agriculture became the leading sector. Oman, reduced to dependence upon rural subsistence economies, suffered from a poorly defined economic base until the discovery and exploitation of oil. The oil industry has been the mainstay of the Omani economy since 1967 and the catalyst for sudden and far reaching development proposals. Oil wealth was also the basis for the reorganization of the government and the economy,

first under Sultan Sa'id bin Taimur and later continuing under Sultan Qaboos.

The overall development orientation of Oman and success in economic growth have been dependent upon several factors, paramount among them being unity. Sultan Sa'id bin Taimur consolidated the population of what is present day Oman within his political sphere by absorbing the competing state ruling part of Oman's Interior, the Imamate of Oman. This action brought about heavy protest in the United Nations and at home where the result was the emigration of a number of political refugees to Saudi Arabia. Aside from the Dhofar rebellion, a reaction to the Sultan's unyielding restrictions against opportunity, development and change, he did extend at least nominal control over the country.

Internal unity was promoted under Sultan Qaboos by such actions as the elimination of internal customs and duties. He also took immediate steps to develop a government administrative infrastructure for the implementation of national policy and a functioning of local government. In the global aspect he brought Oman as a nation into regional affairs and resumed international ties through the exchange of ambassadors with many countries. Oman also joined the Arab League and the United Nations. The Sultan has also placed a great deal of emphasis on education as a means to training manpower at sufficient levels to carry out development objectives. Although Sultan Qaboos has acknowledged that under his father's rule many Omanis illegally left the country to seek work, he extended full Omani rights to them and encouraged them to return and seek work in Oman.

6. Development Priorities in the 1970s. Oman's initial development priorities were widely quoted in economic journals, newspaper articles, interviews, and other journalistic writings. These sources vary considerably in their reliability. Material presented in this section has, in part, been reported in the Middle East Economic Digest. The comprehension nature of these reports is useful but they do contain numerous factual errors. Thus the discussion of development presented here reflects the journalistic bias and facts as they were presented to the public by these western sources.

Echoing the Five Year Development Plan, a 1974 article in Commerce International cited the following development objectives (though they were not clearly prioritized in this sequence) (Bowen-Jones). An emphasis on economic diversification and development of sectors which were not related to oil exploitation was stressed. Developing sectors included mining, port and harbor development, the Sib International Airport facility, expansion of education and health facilities, housing and the capital area including low cost housing and hotels, fisheries and agriculture. Private as well as government industries were encouraged and a push was made to attract consumer oriented industry.

Muscat and Matrah, the Capital Area, were the foci of major development plans combining construction of offices, housing, a post office and a girl's school. To achieve this Sultan Qaboos moved the military out of Matrah's Ruwi area in order to allow for expanding construction. Roads were also cited as high priority. The future long-term objectives were cited as development based on trade and agriculture and a specific move toward this goal had been the planning of sugar refineries. This 1974 economic review article noted in passing that to date 50% of Oman's income was being spent on defense and military development. With the exception of the large defense budget, the

higher priority on education and the incorporation of women into the work force, the program is, in design, an expansion of the development program of Sultan Sa'id bin Taimur.

The analysis of the Omani government and its development policies which Townsend presents (1977) points to some of the problems which have confronted Oman's development policies. The history of ineffective government bodies which in the past were responsible for aspects of development and planning can be attributed to the newly expanded government administration and its lack of experience in carrying out policy. But the nature of the government structure also contributed to the discrepancies between planned policy and actual development in the first years of Sultan Qaboos' reign. In addition, the Sultan's defense priorities played a much larger role in actual development implementation than was usually publicly acknowledged.

Ministries and planning agencies dealing with all sectors, but particularly social services and rural development, were disadvantaged by the "urban bias". Not only was a heavy emphasis set on urban development but planners, with idealistic goals, were often unaware and unconcerned with the realities of rural subsistence to the detriment of the achievement potential of their development plans. Expatriates, both Omani and non-Omani, and Omani government officials too frequently had little or no knowledge of Oman economically, geographically, culturally, and in other respects. The presence of western advisors on development staffs led to resentment for usually these expatriates had more experience and were cautious with regard to non-capital generating expenditures.

Townsend has been deeply critical of the heavy spending and lack of effective government organization which characterized Oman's initial develop-

ment programs. Ad hoc decisions, the lack of sound fiscal policy and hostilities among government decision-makers were all factors militating against careful planning and straight-forward commitment to priorities. Costs for early military, water and electricity projects were far above the necessary level of spending because of spontaneous decisions and arbitrary deadlines. The expenditures on economic and social infrastructure generated recurrent demands upon oil revenues for upkeep, a factor not always taken into consideration in planning future levels of income. Townsend also suggests that the western notion of "conflict of interest" characterized government ministries (1977:144). Ministers and other high ranking personnel were mostly businessmen who were not legally restrained from promoting their business interests through their government offices.

In 1974, with the creation of the Finance Council, Sultan Qaboos increased his own burden of responsibilities as Minister of Finance by becoming the Chairman of the Council. He delegated decision-making authority with the Vice Chairman who in the absence of the Sultan has authority to sanction expenditures on capital projects. The Finance Council imposed an overall control on ministerial spending and has assumed responsibility for financial policies formerly exclusively the prerogative of the Sultan. As Chairman of the Defense Council the Sultan has retained tighter control and there has been no devolution of authority (Townsend 1977:146). He has made decisions concerning expenditures independently of the Council's review. In summarizing his current role, the Sultan has continued to hold the office of the Prime Minister and the portfolios of Finance, Defense and Foreign Affairs. It appears from recent interviews that Oman's present ~~policy is a~~ continuation of the five key tasks which it first undertook in 1970: (1) administrative institution building;

(2) national security; (3) economic infrastructure development; (4) social infrastructure development; and (5) the definition and realization of income generating projects.

7. Brief Summary of Development to Date in the Rural Sector and Social Services.

a. Agriculture. Agriculture, once administered by the Department of Agriculture, Fisheries, Petroleum and Mineral Resources, is now a separate body. Agricultural policy is administered within six administrative-geographical regions: North Batina; South Batina; Interior; Sharqiya; Dhahira and Dhofar. Each region is responsible for its own daily administration and is staffed by a Financial Director and an Agricultural Engineer in charge of technical operations. Initially the Ministry consisted of three branches dealing with administration, research and extension. It now manages a wider range of agricultural concerns including planning, research, crop protection, soil and water and animal husbandry. These administrative subdivisions are responsible for determining policy, long-range planning, budget and areas of research and development which are relevant to all of the administrative-geographic districts.

The government policy is to plan for national self-sufficiency in selected crops which are locally available. Imported foods will be supplementary to domestic staples. The goals of the Ministry which have been established to achieve this self-sufficiency include: (1) improvement of present methods of production; (2) increasing the area under cultivation; and (3) diversification of agriculture. A Five Year Agricultural Development

Plan was drawn up by the Department of Agriculture (prior to the establishment of the Ministry) with the assistance of FAO and IBRD. Although this proposed plan was not adopted an outline of its major points may be useful for current planners. Five sectors of activity were organized with the aim of reducing Oman's dependence upon imported foods:

1) A network of agricultural extension offices to provide technical advice and materials such as fertilizers, pesticides and seeds;

2) research and demonstration farms located in the most important agricultural sectors;

3) production units which insure a supply of fresh produce for the urban markets;

4) the Batina Coast research station at Rumeis, associated with a production unit and equiped with laboratories and a meteorological station;

5) planning for the provision of veterinary services and assistance in falaj maintenance.

With regard to the goals of the Ministry of Agriculture, the Five Year Agricultural Development Plan for the years 1976-1980 sepcifically called for increasing the areas under cultivation from 90,000 acres to 114,000 acres, the improvement of water suuplies and a doubling of the total crop production.[47] Production was to be directed toward a gradual shift from the traditional diet dependent upon dates, fish and rice to a diversified diet with more dairy products, meat and vegetables. Projected export crops include dates, limes and coconuts. Imported technology was to include: 300 tractors, 1,500 wqter pumps and 12,000 sprayers.

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[47] Soil and water projects have been aimed at improving quantity and quality of these resources. Soil research has been linked to land reclamation projects for the expansion of crop areas and 10,000 acres of land have been identified for reclamation.

Several surveys were commissioned by the government for the study of Oman's potential for agricultural development. Beginning in 1973 different parts of the country were studied by the following agencies: ILACO, Durham University, Sir Alexander Gibb with SOGREAH, RENHARDET and Sir William Halcrow. A description of each agricultural zone of Oman is provided in summary form in Bowen-Jones (1974:46). By 1977 a study of water resources had been completed. As water is a limiting factor in the expansion of agriculture, this was a priority study upon which agricultural planning could be based. The results show that, aside from the Batina Coast which is fully cultivated, the Nizwa area has potentially 4,000 hectares of fertile land. Dhofar's potential was assessed at less than estimates had hoped for but there half of the total potential area of cultivation, 4,000 hectares, is presently being farmed. The Sharqiya has a 50% water surplus and 4,000 hectares of arable land.

The FAO of the United Nations began assisting with several agricultural projects (Arab Economist 1975) including: (1) agricultural planning; (2) a national farm survey for the collection of basic economic and social data from the rural sector; (3) water resources -- training for the operation of a meteorological and hydrological service for assessing water availability; (4) soil and water management; and (5) crop and livestock extension services and research management.

Government contracts related to agricultural development have been awarded. For example, in 1973, the Food and Machinery Corporation of America (FMC California) contract was awarded for a major agricultural program to include the development of date, citrus fruit and vegetable cul-

tivation and livestock. A survey of markets, manpower training and management was included in the commission. A Del Monte International contract included provisions for the construction of date processing plants at Nizwa and Rostaq. This enterprise has been successful so far as date farmers have been able to raise productivity and date quality. The training which the farmers have been receiving may enable them to compete in the export market. As well as these programs and other such government subsidized development efforts, the private sector has been urged to participate in agricultural development. Commercial farming is one form of investment which has recently emerged in Oman.

There are two large commercial units, one of which is devoted to fruits and vegetables now located on the Batina Coast. Smaller scale commercial responses to market opportunities have come from small landowners. Some of these 2-5 hectare unit farms are engaging in growing bananas for export.

Experimental farms were established in 1958 under the British subsidized Development Department. These institutions, located at Sohar and Nizwa, were operated by Indian scientists who carried out feasibility experiments on the adaptability of new fruit and vegetable species to the Omani environment. Presently, in addition to the four research stations in operation, two at Rumeis and two at Wadi Quriya (each with one section specializing in agriculture and the other in animal husbandry) the Ministry of Agriculture and Fisheries operates seven production farms and thirty extension centers. The former are run as commercial ventures and the latter serve to link new research developments with the needs of the local cultivators. Practical demonstration has been the format for teaching farmers

new methods and the introduction of new technologically developed materials. Farmers have been receptive to the advantages of these services.

Assistance is also given in the form of loans of equipment such as crop spraying facilities, tractors and low cost fertilizers and seeds. Areal spraying has been carried out to combat diseases affecting date and lime cultivation. The leaf disease called matag has led to extensive crop failure in Oman's interior. The lime gardens of the Batina have been destroyed by a black fly species which ruins foliage. The use of tractors and new seeds has been rising and the distribution of fertilizers and insecticides has increased also. Aid is also available for drilling of wells. The result of crop research and soil analysis have also been made available to farmers.

The government has steadily increased spending in the agriculture sector. In 1978 the Ministry of Agriculture and Fisheries was allocated 27.1 million Omani Riyals (of the total Gross Domestic Product of 892.8 million riyals). Nevertheless the government continues to urge participation from the private sector.

In 1972 a decree concerning land reform was issued by Sultan Qaboos. It contained a provision enabling farmers to lease cultivable land up to five feddans[48] for a 49 year period (el-Mallakh 1972:426). Payments are to begin after the second year of cultivation and are set at the rate of one Riyal Sa'idi (in 1972, $2.60) per feddan yearly. Transfer or inheritance of this land must be carried out with the consent of the Ministry of Agricul-

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48 A feddan (pl. afdina) is a square measurement equivalent to 4,201 square meters.

ture and Fisheries (at that time the Department of Agriculture). Omani and foreign business companies wishing to lease land under this program may do so but must demonstrate proof of productivity and, if relevant, compliance with laws of foreign investment. After 49 years all agricultural leases are renewable.

According to Cordes and Scholz (1980:62) this policy has had the effect on the Batina Coast of benefitting prosperous individuals from the Capital Area and a few bedu. Many of these new gardens there have led to to drying up of water resources and/or high salinization levels which have damaged the palm trees. These new private gardens yield only enough produce for the owner's consumption needs and thus have not contributed to the general economy. The employment demands created by them have been met by the Indian and Pakistani labor force and have not contributed to the employment of Omanis.

In reviewing the nature of land tenure in Oman, which is characterized by small land holdings and a limited area of cultivation, the Ministry determined that efficient marketing might not be accomplished through the local traditional markets. In response to this concern for marketing needs, administrators began to encourage cooperative developments and in 1976 a Department of Co-operatives was established to coordinate activities. By 1978 twelve co-operatives were operating with programs of shared costs for use of machinery, crop spraying and the purchase of seed and fertilizer. Marketing centers are being established in each cooperative district to handle the rise in produce for internal distribution and projected future export. The co-operatives are operated in accordance with the decisions of the member farmers. Some areas have produced a surplus recently and the local markets now carry local fruit and vegetables. The export market is

growing both in the traditional trade in dates and limes and in other newer crops such as bananas.

In the last decade agriculture has experienced termendous changes. Oman is now nearly totally dependent upon imported staple foods including rice and wheat and 40% of all vegetables and meat consumed. The Five Year Agricultural Development Plan described above was aimed at raising the investment in the agricultural industry to slow the migration of labor away from the rural sectors. But the over-mechanization of the Batina Coast irrigation system has led to saline infiltration of the aquifers and in the interior it has led to water shortages. Surveys have shown that two-thirds of the available water supply is in use currently and therefore the remainder cannot sustain extensive planned expansion of the general agricultural industry especially in the Salalah area of Dhofar.

This puts the goal of agricultural development through expansion into question. Agricultural expenasion will now have to depend on land management. Traditional subsistence agricultural methods have led to production which is not organized on a real commercial basis. Altogether livestock and agricultural government farms, training centers and extension services total between forty and fifty establishments. But aside from manpower shortages due to labor migration and the lack of education, the major obstacle is still successful planning.

b. Health. Prior to 1970 the American Mission Hospital served as the principal medical facility in the country. Extension of health facilities was slowly increasing and five small clinics were operating and three more under construction when Sultan Qaboos assumed Oman's leadership. The dis-

persed clinics were designed to serve the health needs of the entire country at a time when the ratio of doctors to citizens was 1:28,000. Sultan Sa'id bin Taimur had approved construction of three hospitals located in Salalah, Ruwi, and the Duru settlements of Tana'am, but construction had been progressing slowly and planning for staffing and equipment remain uncompleted.

The health needs of Oman have been severe, particularly in the Interior where high rates of eye diseases such as trachoma and glaucoma prevailed. Protein-calorie malnutrition and vitamin deficiencies were characteristic of all parts of the Sultanate in addition to tuberculosis, poliomyelitis and ailments stemming from poor hygiene. Malaria was endemic and though to a lesser extent, cholera, small pox and leprosy have had a long history in Oman.[49] The only hospital facilities outside of the Capital Area were established by Petroleum Development (Oman) Ltd. for care of its staff and employees and the Defense Department facilities which served members of the armed forces. Illnesses by and larger were treated locally through the application of folk medicine techniques.

The lack of medical assistance services in Oman has had an impact on migration patterns. Men who migrate for work opportunities are joined by their wives and children more often when medical facilities are available at the job location. This explains the high percentage of Omani women living at the El Ayn oasis in Abu Dhabi (Birks and Sinclair 1978:33). Bedu settlements are growing as pastoral nomadism ceases as a subsistence activity. The bedu have expressed increasing interest in maintaining contact

[49] In Dhofar Province, trachoma, enteric diseases and helminthiasis have been particularly prevalent.

with village health services and many of their now permanent camps are within an hour drive of village health centers (Cordes and Scholz 1980:54-5).

Health, as education, was a central focus of the social services plan of Qaboos' new government and given high priority in initial organization of the government administration. The Ministry of Health was one of the first four ministries created by the new government in 1970. From the beginning its chief staff members were people of extensive experience in medicine and medical services. They put a program of hospital and clinic construction and staff recruiting into operation in a remarkably short time. By the end of 1971 the three hospitals which Sultan Sa'id bin Taimur had planned for Salalah, Ruwi and the Duru settlement of Tana'am were completed. Existing clinics were upgraded and eight new health centers were established in the rural areas. Planning and construction of health delivery systems were critical areas of activity for the Ministry but serious efforts were put into staff recruitment as well. The entire range of professional health personnel; doctors, nurses, technicians, were recruited from abroad as local training programs would have to be in operation several years before the citizens would be trained adequately to fill these jobs. This extensive program of free medical services was assisted by the World Health Organization. In an advisory capacity WHO representatives worked closely with the program's planning details and recruitment policy. It was anticipated that a gradual increase in Omani medical staff would eventually reduce the program's initial heavy dependence upon expatriate staff. Midwives from other Arab countries were also recruited and have helped in advising on proper post-natal procedures and hygienic delivery conditions.

In 1973 the American Mission hospitals, Al-Rahma and Al-Sada were combined into a single Health Service. In the following year the Petroleum Development (Oman) Ltd. hospital, created to treat company workers, joined the larger program of Omani health systems as the Al-Khaula hospital. This facility was redisgned to become a specialized maternity and gynaecological hospital and plans for an additional physiotherapy unit, blood bank and pathological laboratory have been designed.

After 1974 the Public Health Department of the Ministry of Health became increasingly important. At this time it had become apparent that a majority of the nations' fatalities, including those seen at hospitals, were being caused by diseases which were by and large preventible. The clinics and smaller health centers dispersed throughout the country serve as public health and preventive medicine units and attempt to bring health services within reach of the entire rural population. Each of these centers is equiped with laboratory, operating and maternity facilities. The preventive medicine program includes mass public vaccination against small pox and innoculation against other infectious diseases including cholera and tetanus. Preventive action has also been systematically applied to the diseases of malaria, trachoma and diphtheria. Child care instruction has led to a reduction in the rate of infant mortality. Courses coordinated with the Ministry of Education are being offered in domestic hygiene and nutrition and schools now have health programs.

The government policy has not been to encourage private health care companies. Management has traditionally been through the government which feels that this is the best way to maintain integration between health care

and the community. The government to date has built a total of fourteen hospitals, eleven health centers, four small maternity clinics and sixty dispensaries. Extensions have been completed to four large hospitals and the total number of beds available in the country is 1,684. Mobile medical teams have furthered medical outreach activity. To increase Omani participation in health services the government has sponsored training at home and abroad. In 1970 the Al-Rahma nursing school was established and at present offers a three year nursing program modeled after the western nurses training programs. Plans have been made to launch a paramedical staff training project. A malaria control training center offers a six month course for twenty trainees.

In the period between 1970 and 1976, despite the dramatic increase in health care services, a high incidence of disease remained, particularly in the Interior. The government's response to these figures points out the relationship between education, basic living conditions and incidence of disease: "diseases (are) caused mainly by primitive living conditions, non-existent sanitation and insufficient knowledge of personal hygiene" (Nyrop et al 1977:363-364). Illiteracy, nomadism and the lack of roads have been major obstacles to the government's program, especially in its stages of the rural health program.

c. Education. The history of education in 20th century Oman prior to 1970 is brief. A state school was opened in 1914 but in 1927 it was replaced by the Sultaniyya School which operated until 1940. In that year the Muscat Sayyidiya School opened. It was followed by a second school which began operation in Matrah in 1959. By 1970 there were three primary

schools and some secondary teaching was undertaken in Muscat, Matrah and Salalah in addition to the American Mission School. The government schools employed thirty male teachers, most of whom were Palestinian. Through these facilities primary education was offered to 90 boys. A few private schools existed but they suffered from poor quality education and overcrowding. The fears and suspicions of Sultan Sa'id bin Taimur discouraged him from attempting to bring greater educational opportunities for his people, although at the end of his reign he planned a few additional facilities. He felt that education, like modernization, would lead to social unrest and the breakdown of traditional Omani values. Wealthy people who desired education for their children usually had to send them abroad but for most the costs were prohibitive. Those who travelled abroad often went to Kuwait where education was free for all Gulf Arabs (Clements 1980:59).

Village schools existed offering Omani children rudimentary education in the Quran and shari'a (religious law). The aim of these Quranic schools, or kuttab, was to instruct children to live as devout Muslims. These schools traditionally furnished Oman with its religious officials, arbitors, and lawyers, but in many villages where waqf endowments for religious education were lacking or interest was insufficient to promote education, these schools could not provide a high standard of functional literacy or numeracy. The kuttab education reflected village commitment and therefore literacy in some villages has been as low as 5.2% while in others two or three levels of learning have been offered. In these more sophisticated schools teaching has been oriented less toward rote learning of the Quran and more towards the interpretation and application of religious law to modern problems (Birks and Sinclair 1978:6).

Sultan Qaboos' policy toward education has been radically different from his father's. He has viewed education as the essential prerequisite to the development of Oman. The creation of infrastructure and the operation of a modern nation, independent of expatriate advisors was contingent upon both public literacy campaigns and the provision of higher and technical education for as many Omani citizens as possible. The Ministry of Education, advised by a World Bank technical assistance mission, was among the first four ministries which the Sultan established. It faced the enormous problem of trying to educate Omanis with no existing buildings, teachers, curriculum, or administrative framework. At first, education was administered through both the Ministry of Education and the Ministry of Social Affairs and Labor, each responsible for different areas. The Ministry of Education was responsible for primary, intermediate, secondary and general education, teacher training, supervision of non-governmental institutions and the eradication of illiteracy campaign (Clements 1980:110). The Ministry of Social Affairs and Labor undertook vocational, industrial, and commercial training.

The administrative structure of education services presently consists of Minister of Education, an Under Secretary of State and Regional Directors. Oman has seven educational districts: the Capital Area, Batina, Buraimi, Nizwa, Sur, Sohar and Dhofar. Internally the ministry is divided into departments responsible for Education, Planning, Research, and Development, Scholarships and Cultural Affairs, Abolition of Illiteracy and Adult Education coordinated by the Under-Secretary (Ibid). Policy and development are centrally determined but Regional Directors have authority in the operation of their departments on a daily basis, administration of policy, selection of the regional teaching staff and personnel including adminis-

trators, architects and engineers. The centrally issued budget is regionally allocated and administered by the Regional Director according to regular policy guidelines. The principal link between the regional offices and the Ministry is through the Director General for Regional Affairs whose offices serve as a means of consultation and coordination. In order to maintain standard quality of education and curriculum development an Inspector was appointed to monitor, among other things, the adequacy of English language instruction; as the official second language, English, is one of the educational priorities.

By 1976, 200 schools had been established and 55,700 students were enrolled and receiving free education. The Ministry of Education employed 2,230 teachers of whom approximately one-third were women. A survey undertaken at this time (Birks and Sinclair 1978:8) tabulated the incidence of potential students who were not attending school. The survey results cited the following reasons for non-attendance: (1) geographic remoteness of residence; (2) lack of response to the opportunity to acquire formal education; (3) schools filled to capacity; (4) older teen-age children who were unwilling to enter a primary level of education; and (5) teen-agers responsible for a portion of the household economy. Despite these constraints upon some of the children, most living within a school catchment attended classes in 1976.

The Quranic schools continue to offer education in those communities in which the population is too small to warrant the construction of a government school. In these cases the kuttab receives support from the government including payment of teacher salaries in order to perpetuate and strengthen

traditional education. In communities where government school facilities do exist the kuttab are frequently opened to students during the summer months when the government schools are closed. These serve to continue the traditional form of religious education and satisfy village elders who are not always confident that government classes in religion are sufficient.

At present, temporary school facilities erected in the early 1970s are being replaced with permanent school buildings. Statistics for 1980 issued by the Omani government state that in that year 370 schools and institutes were operating in Oman with a student body totalling 95,453; 65,350 boys and 30,103 girls. They were taught by 4,876 teachers. A joint effort among UNESCO advisors, Egyptian and Jordanian educators and the Ministry of Education resulted in the development of a new curriculum which was introduced in 1978. Although somewhat modeled along the British educational format, this was designed for the specific needs of Omani education. This "Omanization" of teaching materials has been a point of national pride.

Education is divided into three stages: (1) Primary Education -- a six year elementary program concentrating on six subjects: Arabic language, religious studies, English language, mathematics, science and social studies; (2) Intermediate education -- a three year program offering general or religious studies and technical education. Children enter a particular intermediate school on the basis of an evaluation of their primary school achievements. Those who enter the technical education program at this stage still receive academic instruction (60%) in addition to practical training (40%); (3) Secondary Education -- a three level with a range of programs:

(a) a general curriculum with an option to begin scientific or literary courses in the second year; (b) religious studies for those who studied religion in the intermediate level, and (c) vocational education in teacher training, technical and commercial subjects or agriculture.

A Vocational Training Council has been established to define national manpower requirements and plan the necessary programs. Since 1979 vocational training centers have been opened at Sib, Saham and Sur under the supervision of the Ministry of Social Affairs and Labor. The Darseet Training Center (formerly the School of Industry) has now implemented an Omani curriculum. Plans have been drawn up for schools for commercial studies as well. The agriculture institute at Nizwa is to be reorganized within the next five years into a full agricultural college. It is expected that the number of centers for adult education (1964 as of 1980) will increase. The Ministry of Information has announced that a university is in the planning stages. Currently, Omanis receive university level education abroad and in 1980 the government granted scholarships to 783 students for this purpose.

8. The Impact of Government Development Policies and Recent Economic Growth Upon the Pastoral Population. In their 1980 study of change among the pastoral populations of Oman, Cordes and Scholz evaluated the effects of centralized government and national development efforts and policies upon this sector of the rural economy. Their findings are summarized below.

The explicit objectives of Sultan Qaboos' government emphasize the following: (1) the development of a nationwide infrastructure and administrative system operating across tribal boundaries; and (2) the development of a national economy. Some of the measures undertaken to integrate the nomadic and semi-nomadic pastoral populations, particularly in the remote areas of the badiya of Dhofar have included:

1) The appointment of some tribal leaders loyal to the Sultan to highly paid government positions.

2) The granting of land to individual tribal members (previously the prerogative of the shaykh) and thus establishment of direct contact between the government and average tribesmen.

3) Recruiting of soldiers for the army from among the mountain and desert tribes.

All of these actions have served to increase contact between rural tribal peoples and central government authorities and illustrate increasing contact without the traditional intermediary services of the shaykh.

With the sudden commercial development of the Interior through the oil industry, the nomad population, particularly the Duru, were given opportunities for wage labor with Petroleum Development (Oman) Ltd. The only government intervention in this process was the establishment of three labor policies regarding employment procedures: (1) minimum wages, to be adjusted according to the cost of living index and to be paid regardless of job qualifications; (2) employment preferences to be given to tribesmen in whose dar a project was being carried out, particularly in instances of road contruction and oil related industrial activity; and (3) hiring of labor, through the shaykh, not directly by the company. The shaykh was to be paid the wages of his employed tribesmen from which his commission could

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be deducted (this right was revoked in 1976 but some tribes still continue this practice).

In Dhofar, the government established a different set of policies towards the pastoralists where the bedu were not experiencing new wage labor opportunities. The nature of government overtures in this recently rebellious region have reflected the Sultan's concern for maintaining peace. Development programs were badly needed in this long neglected province and these were combined with incentives militating against renewed insurgency. Among the specific government actions were: (1) military activity against PDRY (the People's Democratic Republic of Yemen) leftists operating in Dhofar; (2) payment of a premium for former rebels who agreed to give up their weapons or enlist into the Sultan's military service; (3) youth concessions to deter them from becoming involved in guerilla activity: provision of lightweight motorcycles, cinemas and employment for pupils during school vacations; (4) services in education, medicine, nutrition and agriculture, especially adapted to the needs of the mountain population; and (5) hinterland supply centers for the distribution of foodstuffs and medical services.

The Omani government has not developed policies towards the bedu or other pastoral populations which are found in other neighboring states. The Sultan has neither developed strategies for integrating nomadic populations into the modern developments nor established laws of compulsory settlement.

Cordes and Scholz have documented responses among some of the nomad/pastoral populations effected by these development policies and in some cases the presence of wage labor opportunities (1980). Among the Duru who

have experienced favorable working and earning opportunities the pattern of investment now shows a higher rate of purchase of consumer goods, including both convenience items (radios) and capital goods (landrovers, motorized pumps). Most have chosen to settle on their newly acquired and privately owned garden plots within reach of village schools and hospitals. The gardens are owned mainly for prestige, for the real income of the Duru is heavily dependent upon employment with the oil company.

Investment patterns among Duru shaykhs show a trend towards the purchase of landrovers and trucks and, to a lesser extent, motorized pumps for new garden settlements. The vehicles have enabled the shaykhs to develop and maintain an extensive system of transportation of people and goods. Supplementing their income as labor agents the shaykhs have received monthly payments from the government for the concessions granted by the Sultan and for tribal responsibility for the security of oil company facilities and equipment. But these privileges have been reduced over recent years as the authority of the tribal leaders has weakened and government strength has increased.

In Dhofar the government has tried to establish a few permanent settlements with medical facilities, government and administrative offices, police stations, military posts, wells and government operated markets. There has not been a significant settlement of nomads in these locations. Some however have settled at the military bases of Thamarit and Mudhay. Outside Salalah, the Taqah and Mirbat, 6-7,000 plots of land were distributed to Dhofaris. A mixture of bedu, jebalis (mountain nomads) and cultivators have established residence here. During the Dhofar political conflict two

low cost housing areas were built in (1) East Salalah and (2) Taqah for refugees from the mountains and these were particularly successful.

Dhofari bedu have felt fewer economic changes than the Duru. Some economic inputs were received when the government attempted to win the loyalty of these tribes through financial concessions but these were limited. Some have become soldiers and have built homes near their bases with small irrigated gardens attached. Others have developed merchant enterprises. The jebalis have experienced more rapid economic changes. Many of the young have joined the Firqah, the Sultan's native militia which grants them a relatively high monthly wage. Their groceries are provided by the government as well so these persons have abandoned monsoon agriculture. Generally, however, since the end of the rebellion there has been an increase in livestock herding showing a revival of the pastoral sector.

Little modern economic development has taken place among the bedu Jenebah and Wahibah tribes who still traditionally migrate between summer and winter pasture. Some motorized vehicles are used and land grants and newly constructed wells have been distributed among the leading members of these tribes. Other tribesmen however, who desire to acquire land, have come into conflict with settled oasis inhabitants and thus fear the government has not resolved the disputes.

The government policy toward the Shihuh of the Musandam has been that of government assisted settlement. Indirect government support through the provisions of means for digging wells, purchasing motorized pumps or buying seed has led to promoting a transition to agriculture in this area. The shawawi of the Central Oman mountains have largely abandoned their herding and become migrant laborers. Many began to operate taxi and freight trans-

portation enterprises. Now, however, a competing public bus system has led many to abandon their taxi services.

The general tendency among pastoral nomads in Oman has been toward permanent settlement, reduction of migratory activity, and the acceptance of non-agricultural employment. But despite the individual freedom of choice, the conditions of most settlements, the abandonment of oasis gardens and wells, the failure of transport enterprises, and high rates of labor migration are indicative of the difficulties which this group has faced in the recent years of rapid change. A few government settlements were built to attempt to alleviate some of the problems facing pastoralists today. But the projects at Tana'am and Haima were undertaken without a prior survey of nomad willingness to settle in these locations nor were adequate provisions for economic opportunity planned for the settlements.

9. Recommendations Regarding Development in Oasis Communities. Although Wilkinson has not studied the impact of recent changes on specific Oman community populations as have Cordes and Scholz with nomadic populations, he has written a general evaluation of contemporary problems facing oasis communities with regard to government administration of development programs. Wilkinson bases this evaluation upon his model of contemporary change in Oman villages (see this text, page 105). The main points of his discussion are that the collapse of village agriculture, which provides the economic basis of the socio-political system, has been due to the following factors: (1) increased importation of foodstuffs; (2) a decline in demand for dates and camels, the traditional products of the land; (3) the availability of

an alternative labor economy; (4) the attractions of centers of development; and (5) the breakup of the organization of the traditional social structures (1980:122).

Wilkinson focuses upon the fragility of village social structure in his assessment of the weaknesses in Oman's rural development program and provides valuable insights. While acknowledging that in some measure needs are being fulfilled by government organization and development programs, he cautions "it is the growth of a welfare state institution, administered by a remote central government, which is replacing self help and the sense of communal responsibility" (Ibid:130).

His 1978 study, Problems of Oasis Development, makes a number of recommendations for oasis settlements undergoing changes in their resource base. This monograph encompasses a broad range of desert oases settlements throughout the Middle East and North Africa, but much of his background information, as well as examples, are drawn from his personal research in Oman. His principal argument is directed against over simplified generalized solutions. Oasis communities are unique and the solutions to problems in one cannot be randomly applied to another. Development programs concerning the agricultural sector should consider the following recommendations with regard to the future implications of frequently cited goals and policies.

(1) Increasing water supplies. This may have value but emphasis should be upon how new water is made available and how people are attracted back to the rural areas. Water is frequently wasted because there is inadequate labor to use it. More water for modern farms which are not economic units of production but estates for the wealthy would not benefit the larger economy.

(2) Mechanization. (a) Environmental impact. Some areas of cultivation have increased with pump irrigation but wastage has increased dramatically and has been accompanied by lowered water tables and salinization. Some upstream settlements now have no water at all. (b) Social impact. Social repercussions may be undesirable. Studies should be undertaken to understand the details of the socio-economic structure and land tenure systems of each particular community. Settlements have unique characteristics and they must be studied independently. If mechanized technology is available only for the wealthy, social differentiation may increase and wide the gap between rich and poor.

(3) Altering existing methods of irrigation. This presents a high risk because distribution systems (despite the fact that they may be wasteful of land and water) are closely linked with the physical nature of the water supply, maintenance of the irrigation system, land tenure patterns, work organization and social institutions.

(4) Reform of land and water codes. Customary law (<u>'urf</u>) represents the application of Islamic law to local conditions and the codes vary according to local needs. Changes would have to be made on a localized basis even when the form of irrigation systems are the same.

(5) Changes in crop distribution. Similar to changes in land and water codes, proposals as to which crops are to be grown must take into account the needs of each settlement and its relationship to the entire national system of agricultural production and distribution. Subsidies to assist farmers with new production methods in the form of technical assistance, the distribution of materials and machinery, marketing and

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transport are best allocated through reinforcement of the existing village structure rather than the creation of new institutions.

The summary of the Durham Report (II 1978:167) also contains recommendations. These include technical suggestions pertaining to aspects of engineering, maintenance, durability, etc. Other sections deal with water distribution and falaj income and point out a need for changes in some of the local water distribution systems to reduce losses. Limitations to the control of large portions of water resources by shaykhs or other individuals are suggested as a means of increasing falaj income to be used for maintenance and repairs. Outside aid is recommended in the form of technology appropriate to village social and work activity patterns which can be utilized without specialized educational or technological knowledge.

Appended to the Durham text (II 1978:175) is a section entitled "Development Recommendations concerning Falaj Settlements of Northern Oman". These recommendations are prefaced with a statement-summary of current needs of falaj communities and the authors' justifications for government intervention in village support and organization of water distribution. They feel that the present deterioration of aflaj can produce only a negative impact on the local and regional socio-economic sectors. They stress a holistic approach which considers not merely engineering or social needs but the critical relationships between the two. The "Recommendations" (Ibid:177) are briefly outlined and appeal to the Omani government to establish a "Falaj Settlement Development Unit" to be integrated into the present development administrative framework of the government.

The purpose of the Unit would be to operate in the field and (1) carry out investigations and evaluations of falaj operation; (2) determine the feasibility and appropriateness of project improvements; (3) encourage local collaboration with existing community institutions and make grants available; (4) rural situations should be individually evaluated as to the relevance of proposed improvements; and (5) to make recommendations to the appropriate government agencies. Suggestions regarding staff and organization are outlined as well.

10. Development Policy in the 1980s: The Second Five Year Plan. The details of the Second Five Year Plan which have been selected for discussion in the economic journals and business literature emphasize the industrial sector rather than social services and rural production. Nevertheless the major features of the plan, as highlighted by the western economic development literature, will be summarized briefly. The Second Five Year Plan budget for 1981-1985 is estimated to total R. O. 7,368 ($21,319 million) in expenditures depending upon the price of oil. The plan took effect on January 1, 1981 with the proposed budget, despite an anticipated drop in oil revenues. Communications (roads, airports, ports and telecommunications) are likely to receive the largest share of capital expenditures, and of these the Mina Qaboos (Port Qaboos) extension plan is the major project (MEED Nov. 21, 1980). A self-help policy is the dominant feature of the plan and attention is directed towards projects that will reduce and eliminate the economy's dependence upon oil revenues. Most of the plan is new; only 176 of the 1,047 scheduled projects are held over from the preceding plan (1976-1980).

Current personnel in administration include Development Council Secretary General, Sherif Lutfi and Development Council Vice-Chairman, Minister of State for Foreign Affairs Qais Abdel-Moneim al-Zawawi (who is now Deputy Prime Minister for Economic & Financial Affairs). Sultan Qaboos continues to chair both the Development and the Finance Councils. Ministers who wish to vary their programs from the guidelines of the plan must receive the consent of both councils.

Several major plans that have been projected are not published on the projects list of the Second Five Year Plan. Among them is Qaboos University which is scheduled for construction in Rusail outside of the Capital Area within the next five years. The University is expected to house faculties of medicine, agriculture, science, engineering and education. The first enrollments are expected in 1985. Other plans which are not included in the 1981-1985 scheme concern Petroleum Development (Oman) Ltd. The oil company's development program is expanding at a more rapid rate than any other. Their 1981 budget was $450 million but this figure is expected to rise to $1,000 million in the next few years. This will include expenditures for copper and mining development to be handled through the state Oman Mining and Company. Defense Ministry expenditure plans are not publicized but it appears that spending in this sector will continue at high levels with an emphasis on infrastructure development (MEED June 19, 1981). Estimates suggest that 40% of the budget will be allocated to defense in the coming five years.

The Commerce and Industry Ministry program includes continuing projects such as the cement works outside the Capital Area, the Rusail Industrial

and a proposed salt refinery. Minister Mohammed Zubair also plans a food security storage scheme to provide facilities for Salalah, Muscat and Matrah. These are expected to help stabilize prices and provide a strategic food reserve. The Ministry will also undertake a joint project with the Ministry of Agriculture and Fisheries to build six main centers and some secondary ones to assist farmers in the marketing of locally grown produce. The centers will be in Nizwa, Sohar, and Salalah, as well as other locations. At these centers farmers will be able to have their produce packed for domestic distribution and export.

Private sector involvement continues to be a principal objective towards the establishment of an oil-independent economy. Private investment in the industrial sector is encouraged through continuing government support for the Oman Development Bank.

In evaluating Oman's labor needs in terms of the projects outlined in the Second Five Year Plan, the Omani government has actively invited more Pakistanis to migrate to Oman for work opportunities (MEED Dec. 4, 1981). Estimates are that 155,000 more foreign workers will be needed to implement the new projects. The categories of workers most actively being recruited include doctors, engineers, teachers, accountants and skilled tradesmen.

EDUCATION AND HEALTH

Information on the state of health and education in the Sultanate of Oman is scarce and largely superficial, dealing mainly with the Sultanate's numerical achievements since 1970. The available sources are F. A. Clements, The Reborn Land, 1970; Nyrop, et al, Area Handbook for the Persian Gulf States, 1977; J. S. Birks and C. A. Sinclair, "Migration for Employment Project The Sultanate of Oman: Economic Development, The Domestic Labour Market and International Migration", ILO, 1978; Oman '81, Ministry of Information and Youth Affairs, Sultanate of Oman; Ann Dearden, ed., Arab Women, London, Minority Rights Group, 1975.

The Sultanate of Oman has witnessed a dramatic improvement in its states of health and education since 1970. In the few years following Sultan Qaboos' accession to power, there was a sharp increase in the number of schools, teachers, students, health centers, hospitals, and physicians.

1. Education. Before 1970 formal secular education was practically non-existent. There were only three government elementary schools in the whole country -- Muscat, Matrah, and Salalah -- enrolling about 900 boys largely hand-picked by the Sultan himself. There was also a religious institute in Muscat that had 50 boys, three private boys' schools, over crowded and not of high quality, and one American Missionary School for foreign girls (Nyrop et al 1977:365-366). Thus, before 1970, education was largely traditional: religious education in Quranic schools, kuttab. The kuttab were village-based and were operated largely by learned men, although in a few instances by women

(Birks and Sinclair 1978:6-7). The kuttab stressed Islamic education and frequently the standards were very low regarding literacy and numeracy (Ibid). The effective literacy rate in some villages in 1972 was only 5.2% (Ibid). Since Oman was largely closed to non-Gulf Arabs there was an acute shortage of teachers (Clements 1980:60). Families who could afford to do so smuggled their sons out of the country for education overseas. Kuwait received the largest number of students since it offered free education to any person from the Gulf states. Even schools in Britain or America refused entry to Omani students without permission from the Sultan himself (Ibid).

Conditions changed after 1970. Initially the main priority was to spread education as rapidly and widely as possible, without awaiting a full infrastructure:

> Providing instant education meant, however, that not all schools could be housed in proper buildings. Many sprang up in tents and huts. The current development plan seeks to replace all such accommodations with proper school buildings by 1987 (Oman '81:69).

In 1970 the number of primary schools increased from three to sixteen including three schools for girls. In 1978/1979 there were 352 schools in Oman of which 86 were at the intermediate level and 9 schools at the secondary level; two of the secondary schools were for girls (Clements 1980: 109). The total number of students by mid-1976 was 55,752: 54,457 primary students of whom 14,817 were girls; 1,095 intermediate of whom 170 were girls; and 200 secondary of whom 57 were girls (Nyrop et al 1977:366). Sixty-five new schools, some with health facilities, were scheduled to be constructed in 1975/1976, but the number was expected to taper off to about 25 a year thereafter (Ibid). By 1980/1981 there were 373 schools at three levels attended by 111,070 students of which girls formed about one-third

(Oman '81:69). Of the total number of students attending school, 93,623 are at the primary level, 15,231 at the intermediate or preparatory, and 1,486 at the secondary; 730 students are in specialized training schools (Ibid).

Education is provided by the Ministry of Education although in the early stages it was done jointly with the Ministry of Social Affairs and Labor (Clements 1980:110). Oman is divided into seven education regions: (1) the Capital Area; (2) Batina; (3) Buraimi; (4) Nizwa; (5) Sur; (6) Sohar and (7) Dhofar. The Ministry of Education is headed by a Minister, an Under-Secretary, a Director General for Regional Affairs, and Regional Directors. It is divided into departments of "Education, Planning, Research and Development, Scholarships and Cultural Affairs, Abolition of Illiteracy, and Adult Education with responsibility for the coordination and control of the departments resting with the Under-Secretary" (Ibid). The education budget is centralized, divided among the different regions according to their needs.

The new government revised the education structure. A twelve year system consisting of three levels was introduced: primary - 6 years; intermediate or preparatory - 3 years; and secondary - 3 years. When students enter the intermediate level they are divided into general and technical education classes based on students' own interest and their academic performance at the primary level. The curriculum in the technical schools is 60% academic and only 40% technical (Ibid:113). The first technical school was opened in Sohar in 1972. At the secondary level students can go in one of two directions: a general education at the second year of which students go into either science or art, and a vocational

curriculum where students go into teachers' training, agriculture, or technical and commercial subjects (Ibid:114). Oman, in cooperation with international agencies, was to open the first of three planned teacher's training colleges in 1976/1977. The three schools were to be situated in Salalah, Dhofar, to provide training for 200 Omani men per year; a teachers' training college in Muscat for 200 women; and a second one in Muscat for the training of 300 men (Nyrop et al 1977). In light of the desire for the Omanization of executive teaching jobs, the Sultanate is in desparate need of teachers (Oman '81). In the mid 1970s, out of 2,000 teachers in Oman, about 85% came from other Arab countries, mainly Egypt, Jordan, and the Sudan (Nyrop et al 1977:367). Most of these teachers were very reluctant to live in the more remote areas which made opening schools in those villages very difficult. To counteract these situations where the government was unable to replace the kuttab with primary schools, the strategy was to reinforce and improve the kuttab, putting the 'ulama (learned men) on the Ministry payroll instead of having them rely on the villages for their salaries (Birks and Sinclair 1978:7).

The government also revised the curriculum to meet the specific needs of Omani students. In 1972 and 1973 a consultant group of UNICEF and UNESCO experts suggested updating the curriculum to put more emphasis on literacy and numerical skills and less on history, literature and religious studies (Nyrop et al 1977:366). The advice was immediately adopted. In 1978 the task of tailoring education and training to manpower needs became the responsibility of the Education and Training Council established by Sultan Qaboos (Oman '81:71). Omanization of the curriculum was also introduced in

1978, starting with secondary classes and then moving on to preparatory and primary (Ibid). Curriculum in girls' schools put a prime emphasis on domestic science. The first school in Domestic Science was established in Sohar where subjects such as nutrition, childcare, and hygiene are taught to improve the home living standards and to introduce better health and childcare (Clements 1980:115).

In addition to technical schools at the intermediate and secondary levels, vocational schools have been established for the training of carpenters, bricklayers, welders, electricians, etc.; English, Arabic, religious studies, and trade theory form part of the curriculum (Nyrop et al 1977:367; Clements 1980:114). The first vocational training center was opened in Matrah in 1976, at a Shell Oil-sponsored trade school that had been taken over by the government in 1970 (Nyrop et al 1977:367). Students in vocational schools are recruited from primary schools with the major aim being to satisfy the pressing needs of Oman (Clements 1980:114). In 1976 there were five vocational schools under construction: a commercial school for girls in Muscat, a technical School in Muscat, and three agricultural schools in Salalah, Sohar and Nizwa (Nyrop et al 1977:367). A School of Public Administration was opened in 1973 to train clerks and secretaries in a one year program (Ibid). There is also an agricultural school at Nizwa that recruits from the primary level and gives practical and theoretical training in farming (Clements 1980:114). In Matrah, a two year in-service teachers' training course was established in 1972 (Ibid).

Oman has made an impressive progress in literacy and adult education programs. The Department of Adult Education and Community Development has

a literacy campaign that began in 1971; by 1973 they had about 70 classes catering to about 5,000 students (Clements 1980:116). By 1978 there were about 300 literacy classes in operation (Ibid). Literate adults are encouraged to attend evening primary classes. Some schools that teach traditional crafts such as weaving and embroidery are organized on a sessional basis: morning, afternoon and evenings; housewives are encouraged to attend the latter two sessions (Ibid:116).

There are also schools for the blind that give general education and teach specialized skills. Clubs and sporting facilities have been established in recent years for both boys and girls. By 1979 the total membership in such clubs was about 20,000 and the aid received reached R. O. 35,000 in the form of buildings, books, equipment, etc. (Ibid:119). Scouting was introduced in 1973 and within two years there were 3,000 boy scouts, 200 cubs, 128 girl scouts and 500 brownies (Ibid).

As we have seen the Sultanate has very seriously pursued an education development program since 1970. Government expenditure on education rose from R. O. 0.5 million in 1971 tenfold to 5.0 million in 1975 (Birks and Sinclair 1978:7). Eighty-four million Omani Riyals have been allocated for education development in the 1981-1985 period (Oman '81:70). Despite the progress that has been made note all school age children are receiving formal education in Oman. Some live in remote areas where schools have not yet been established; other have either not yet responded to the new opportunities or have been denied admittance because schools are full (Birks and Sinclair 1978:8). Although education is free in Oman, it is not yet compulsory. There is also a marked difference between the availability of education for

boys and girls. Since many rural families still oppose sending their daughters to school, the percentage of school-age girls receiving formal schooling is 14% as against 37% for school-age boys.

> The differential between the availability of education for boys and girls is, however, declining. Whilst, in 1970/71, 16.4 per cent of pupils were female, in 1971/72 females comprised 12.7 per cent; in 1972/73, 16.6 per cent; in 1973/74, 22.2 per cent; in 1974/75, 25.1 per cent; and in 1975/76, 27.0 per cent (Birks and Sinclair 1978:9).

There was a total of 374 Omani students receiving their education overseas in 1975/76 in addition to 180 students attending Omani technical institutes with priority on clerical and administrative training (Ibid).

2. Health. Prior to 1970, health care facilities in Oman were as inadequate as educational facilities. The only modern health facilities in the Sultanate before 1970 were the American Mission Hospital, the oil company hospital that catered to its own staff, five small clinics, and the Defense Department's own medical unit (Clements 1980:81). Three hospitals at Tana'am, Salalah, and Ruwi were under construction when Sultan Sa'id was deposed (Ibid). Under the newly created Ministry of Health, the Salalah hospital was completed in April, the Tana'am in August, and the Ruwi in December of 1971, which meant the addition of 200 beds within a single year (Ibid). In 1973 and 1974 the American Mission Hospital and the oil company hospitals were incorporated into the Health Service, becoming the Al-Khoula Hospital which was reconstructed to be the major maternity and gynaecological hospital in the Sultanate with 114 beds in addition to a surgical wing containing 67 beds. A physiotherapy unit, a blood bank, and a pathological laboratory were to be added to the hospital.

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In addition to the hospitals, a number of health centers and dispensaries were constructed or the existing ones improved. According to the Area Handbook, eleven health centers and 40 dispensaries were ready by 1976. Health centers are provided with a maximum of 24 beds each, six of which are reserved for maternity cases and the rest divided equally among male and female patients (Clements 1980:82). The health centers also contain minor operating and delivery theaters, an x-ray unit, a small laboratory, and an out-patient department. Treatment in all government hopsital and health centers is free.

Table 5 shows the growth in health services since the establisment of the Ministry of Health in 1970.

TABLE 5

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Hospitals	—	5	10	12	13	13	13	13	13
Health Centres	9	10	7*	5*	11	11	11	12	12
Dispensaries	10	13	27	30	32	40	42	45	47
Beds	12	216	526	664	934	1,000	1,252	1,409	1,510
Doctors	13	46	63	86	158	153	169	211	211
Nurses	2	77	115	208	335	411	522	624	659
Health Assistants/ Sanitary Assistants/ School Health Visitors	35	46	68	84	100	68	182	190	223

* Health Centres had been upgraded to hospitals.

(Ibid:83).

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Although there are no available morbidity and mortality figures for Oman,[50] Nyrop et al (1977) estimate the average life span in the Sultanate to be between 40-45 years and infant morbidity and mortality to be high. Despite the provision of free medical facilities, poor health profile characterizing Oman before 1970 remained applicable through the mid-1970s for many areas of the Sultanate, especially the Interiors. This poor state of health is attributed mainly to "primitive living conditions, non-existent sanitation and insufficient knowledge of personal hygiene" (Nyrop et al 1977:363-364 quoting the Government of Oman). Current illnesses, especially in the Interior, include trachoma, glaucoma and other eye diseases, enteric diseases, helminthiasis, especially in the Dhofar Province which as a monsoon climate, poliomyelitis, tuberculosis, protein/calorie malnutrition and vitamin deficiency, and malaria (Ibid; Clements 1980). A small incidence of small pox, cholera and leprosy was also reported at that time. Oman '81 notes a sharp drop in trachoma: a 1976 school children survey indicated that 86% of them had trachoma as opposed to only 7% in 1980. A trachoma eradication program by 1982 is in force throughout the Sultanate (Ibid).

Preventive medicine is stressed by the Public Health Department of the Ministry of Health. A cholera epidemic was controlled in 1971 with a concentrated program of innoculation (Nyrop et al 1977; Clements 1980). Since 1971 there has been a campaign against small pox and other infectious diseases. Positive response to vaccination even from people living in remote areas has led to a drop in diphteria, poliomyelitis, whooping cough,

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[50] The World Bank's Development Report for 1980 omits both Oman and the United Arab Emirates from its quantitative listing of "World Development Indicators".

tetanus and tuberculosis (Oman '81). The Public Health Department is responsible for all innoculations, vaccinations, disease control, health education, maternal and child care, school health programs, sanitation and hygiene, anti-malaria campaigns, and nutrition (Nyrop et al 1977). The Department also aims to increase the number of mid-wives and midwife assistants, who numbered 64 and 24 respectively in 1976 (Ibid).

As with teachers, the country has a scarcity of Omani physicians. Of 200 physicians recorded in 1976 only 20 were Omanis; the rest were mainly Indians and Pakistanis, as are nurses and health technicians (Ibid).

Future development plans in health include setting up health facilities in areas presently served by mobile medical units, the opening of several more health centers with maternity facilities and dispensaries, the addition of 12 extra beds each to the Khasab and Baya Health Centers in the Musandam area in addition to an operating theater and labor room (Oman '81). Al-Khoula and Al-Nahdah referral hospitals, both in the Muscat area, will be expanded (Nyrop et al 1977), and the first will have four extra operating theaters and a casualty department (Oman '81). In 1980, 86 beds and additional facilities were added to al-Khoula including:

> private and general maternity wards, a private surgical ward, an intensive care unit, a severe burns unit, and a physiotherapy department which will form the nucleus of a rehabilitiation centre where, in time, artificial limbs, and appliances will be manufactured (Ibid:76).

Forty-four beds each were added to the Sur, Sohar, and Nizwa hospitals in addition to specialist services in general medicine, surgery, obstetrics and gynaecology (Ibid). The replacement of the 80-bed Salalah hospital with a modern building of 250 beds was part of the 1976 development plans (Nyrop

et al 1977). Preliminary studies for a 600-bed hospital bearing the Sultan's name with a psychiatric unit have also been undertaken (Ibid).

There were two major projects, a mental hospital with 60 beds and a health institute, to have been completed last year (Oman '81). The Institute is to provide training for nurses and paramedics such as x-ray technicians, physiotherapists, laboratory technicians and sanitary inspectors (Ibid).

According to the World Bank, the major determinants of the state of health in developing coutries are: the peoples' ability to pay for goods and services, especially food, clean water, and housing; the health environment, including public sanitation, the prevalence of communicable diseases, and climate; and the peoples' understanding of nutrition, health, and hygiene (IBRD 1980:53). The major gap in our understanding of the state of health in Oman has been the lack of study of the last factor. As far as we can determine, there exists no comprehensive, in-depth analysis of the local conceptions of health and curing, the nature of the traditional health delivery system, and the possibility for up-grading and incorporating that system into a modern, integrated approach to health delivery. It is strongly suggested that the socio-institutional profile team accord reasonable attention to this area.

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1969 Arab Settlement in Oman: the Origins and Development of the Tribal Pattern and its Relationship to the Imamate. Unpublished Ph.D. dissertation. Oxford. Oxford University.

1974 "Das Volk von Oman." Bild der Volker 8(2):182-189. Die Arabische Welt und Israle. Wiesbaden. F. A. Brockhaus.

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1980 Die Bedeutung der Integration von Beduinen in den Prozess des okonomischen, sozialen und politischen Aufbaus im Sultanat Oman, dargestellt am Beispiel der Eklave Musandem. Unpublished Ph.D. dissertation. University of Gottingen.

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1975 "Changes in the economy and political attitudes, and the development of culture on the coast of Oman between 1900 and 1940" Arabian Studies 2:167-178.

The author describes the cultural, social and political trends of the first half of the twentieth century in Trucial Oman. Although the details of the article are not relevant directly to events in Oman, it does present an overview of the regional forces whose impact was felt throughout the Gulf area. Abdullah focuses on the decline of the pearl industry and the initial years of oil development in the Gulf shaykhdoms. The collapse of the pearl industry affected Oman's interior population as farmers who seasonally went to work on the pearl banks of the Arabian Gulf were now denied this supplementary income. Omani bedu tribes who had received protection payments revolted when this income ceased and attached the coastal settlements. The author's general conclusions regarding social and cultural developments in the area (now the United Arab Emirates) are not completely applicable to the situation in Oman at that time.

Economy, The Gulf Region, History.

Anthony, John Duke
1967 Historical and Cultural Dictionary of the Sultanate of Oman and the Emirates of Eastern Arabia. Historical and Cultural Dictionaries of Asia 9. Metuchen, New Jersey. Scarecrow Press, Inc.

This dictionary is alphabetically arranged and contains full explanations of terms with both their past and present usages. It covers geography, political and historical events, places and personnages, ethnic groups, commercial and business enterprises and social and legal Arabic terms.

Reference.

Arabian American Oil Company
1952 Oman and the Southern Shore of the Persian Gulf. Cairo.

This handbook is mostly devoted to Oman but it surveys Abu Dhabi and Qatar as well. The editors have focused on Interior Oman and included a lengthy chapter on the Imamate region and smaller sections of the Dhahirah and Al-Buraimi. An overview of the Imamate discusses the history of the religious state, the influence of the Wahabis and the twentieth century colonial interaction. In reviewing the political structure of the Imamate and its

sphere of influence there is information on the policies of the then-current Imama, Mohammed ibn 'abd Allah al-Khalili. His supperters, the Amirs of Jebel Akhdar and the Sharqiya and various tribes are discussed in terms of their alliances and affiliations. Useful, though dated, tribal information on the tribal alliances of the Imamate and settlement patterns, religious and factional alliances is provided.

History, The Ibadhi Imamate, Reference, Settlement Pattern, Tribes.

Barth, Fredrik
1979 "Factors of production, economic circulation, and inequality in inner Arabia." in George Dalton ed. Research in Economic Anthropology Vol. 1:53-72.

This summary of Barth's research in the Interior Omani town of Bahla reports some major aspects of the traditional economic organization of an agrarian town in south east Arabia. He describes the institutionalized structure and circulation of the factors of production. Land is actively marketed and approximately one-third of the total land in Bahla is private property. Nearly half is publicly owned (bayt al mal) and the remainder is under the management of the falaj company. Water is seldom sold however, and the high demand for water in summer is met through a rental system of distribution by auction. Markets, land, and water are monetarized but the produce market for dates is not.

In this system the farmer must rent water shares for cash but finds difficulty in cash marketing of any surplus dates. The labor market is monetarized giving cultivators the option to engage in wage labor. However, there is an excess labor supply and this underemployment has led to depressed wages in addition to a scarcity of work opportunities. Barth concludes that, in this system, those who share in the ownershi- of land and water only pay out cash for labor, while the poor man pays high cash princes for rental of water shares. Thus, the rich get richer while the poor are barred from bettering their lot.

Barth does mention cash inflow from remittances sent by migrant laborers but does not incorporate them into his model. On the basis of the studies of the shawawi populations and some mountain villages (Birks 1977, 1978) it seems likely that cash remittances are significant factors which need to be analyzed as an integral part of the local economy. Furthermore, it has been widely documented that most villages are suffering from severe labor shortages. It seems that Bahla as a larger town may be attracting migrants from smaller settlements and thus the labor excess may be a relatively recent phenomenon.

Agriculture, Rural Economy, Occupational Specialization, Irrigation, Rural Sector, Social Stratification, Village Social Structure.

Bell, G. E. and R. W. Dutton
n.d. "A preliminary cost-benefit analysis of running a goat (sheep) small-holding on the Batina" Durham University Khabura Development Project. Preliminary Reports. Vol. 3. Economic Studies No. 1.

This report examines the costs and profits of running a small livestock farm on the Batina. It is based mainly on the experience gained by the Durham project farm at Khabura to the end of 1978. It concludes that a farmer should be able to realize a profit of approximately R. O. 3000 per year from 1.7 ha. of forage crops after deducting R. O. 1200 for labor. If the farm system can in practice be sufficiently undemanding of labor to be run by the farmer and his family, then a profit of over R. O. 4000 per year should be possible at 1978 prices.

Forage Crops, Mixed Farming, Small Ruminants.

Birks, J. S.
1976 "Some aspects of demography related to development in the Middle East with special reference to the Sultanate of Oman" Bulletin of the British Society for Middle Eastern Studies. 3(2):79-88.

This article discusses some of the population data collected in the survey region of the Durham University Census and Household Survey. Current trends and problems of data collection are presented. Labor migration from Omani villages has a specific age-sex ratio: 90% of absentees are males and 69% are in the 15-34 year old age group. Because of the social ambiguity of female status in certain situations and the need for family privacy, women are underenumerated. Causes of labor migration and patterns of movement are reviewed, as well as their implications for the role of women. Women are taking a wider and more active role in labor and decision-making and attitudes towards women are changing. Consequences of labor migration include the decline in viability of both the pastoral and agricultural sectors and the destruction (through neglect) of capital investment in irrigation systems. Future trends may be predicted on the basis of a likely impending correlation between a population increase and a fall in oil revenues. Development and planning agencies need to take these factors in consideration.

Development, Labor Migration, Population, Rural Sector, Sex Roles, Women.

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Birks, J. S.
1976a "The shawawi population of northern Oman: a pastoral society in transition" Journal of Oman Studies 2:9-16.

The shawāwiya are the sedentary component of the Omani pastoral population (the bedouin are the mobile component). Concentrating on small stock, unlike the camel pastoralism of the bedouin, the shawāwiya live in dispersed households or in small hamlets of 25 people or less. While they often own date palms and gardens, they do not consider themselves farmers. The characteristic residence is the temporary camp, fariq (pl. firqān), pitched in proximity to a water source. In the mountains there is some seasonal movement of the household fariq, but the distance covered is short, usually less than 2 kilometers, and the same watering point may be employed throughout the year. Birks asserts that these movements are for the convenience of the household (to catch a summer breeze, or to be closer to a fuelwood supply) and not a transhumant move to provide the goats with better pasture. Goats constitute 80 percent of the mountain herds, with sheep making up the remainder. A few camels may be kept, but cattle are so rare as to be absent. Despite the numerical importance of goats (about half the families maintain between 50 and 300 head) Birks implies that the mountain shawāwiya are indifferent shepherds, and the limited supervision given the herds leads to substantial losses.

The shawāwiya supplement their pastoral economy with date palms grown not in villages but in huyul (sing. hayl), small springs or seepages in close proximity to their pastures. Left unguarded, crop losses are also high from damages affected by domestic animals, hornets, rats and birds. Dates are consumed by both the people and their stock. In consequence of the low yields, most shawāwiya must buy dates from settled farm villages. In order to obtain the necessary cash (in addition to that earned from animal sales) they sell dairy produce, and collect honey and firewood in the bush for marketing as well.

In the Dharira lowlands is a small shawāwiya popoluation which, unlike the independent mountain shawāwiya live as clients of the shaykhs of local sedentary communities. Since there are no naturally occurring watering points in the lowlands, the shawāwiya cannot engage in dispersed firqān settlement, but rather they are concentrated near the village falaj, often on deserted farmland which offers the best pasture. Although there is somewhat greater household movement in the lowlands than in the mountains, Birks again suggests that the reason for this movement is not the search for pasture, but rather "to minimise human discomforts". Goat herds

are smaller in the lowlands, and sheep are also important. About 16% of the households possess cattle, and there are a fair number of camels. "This represents close links with the villages, for a cow... has to be fed daily with alfalfa, so the owners have to visit a settlement each day to obtain the fodder."

Labor Migration, Occupational Specialization, Pastoralism, Rural Sector, Seasonal Migration, Sex Roles, Social Change.

Birks, J. S.
1977 "The reaction of rural populations to drought: a case study from south east Arabia" Erdkunde 31:299-305.

The problem of drought in Arabia is often a highly localized phenomenon. Several Omani communities affected by small-scale droughts were monitored by the author of this article. The agricultural mountain valley village of Ghayzayn is presented as a case study of population response to drought conditions. In 1973 the decline in local rainfall led to the reduction of the falaj water flow in this village. It dropped from 820 gallons per minute in November 1973 to less than 20 g.p.m. a year later. Villagers' responses as the water level declined included: the abandonment of irrigated seasonal and fodder crops and the extension of the length of the water distribution cycle from 7 to 14 days (and, in some cases, to 28 days). This resulted in heavy losses among the lime trees and palms and a small yield of dates. In order to feed livestock, fodder was purchased and some villagers had to sell livestock in order to obtain the funds to support the rest of their herds.

Very little attempt was made by the villagers to improve the falaj and increase the flow of water. Villagers reacted apathetically to the situation because tribal leaders showed no interest in aiding them and any improvements made by the villagers would largely benefit absentee landlords. People began to leave the village to find wage labor in order to pay their debts and some left permanently. When tribal leaders did investigate the falaj they located problems which, if repaired, would alleviate the impact of the drought. The villagers did not carry out the repairs. Birks feels that the underlying problem among the villagers has been a changing attitude towards agriculture which has allowed a general deterioration of the agricultural infrastructure to take place. A major factor in this trend has been the withdrawal of labor from the village as young men seek wage labor abroad. The decision of the villagers to rely more heavily upon cash from wage labor in a time of stress, rather than to raise communal efforts to secure labor and funds for repairs shows a movement toward the modern economic sector.

Agriculture, Development, Irrigation, Labor Migration, Rural Sector, Village Social Structure.

Birks, J. S.
1978 "Development or decline of pastoralists: the Bani Qitab of the Sultanate of Oman" Arabian Studies 4:7-19.

This is a brief although very interesting article which points out the contradiction between increased income, evident in improvements in housing and other "quality of life" indicators, and genuine development, the capacity to sustain the economic base of the community through growth. This case study examined a group which occupies the Wādi Jufrah region bounded by mountains to the east and the Empty Quarter of Saudi Arabia to the west. The location of the Bani Qitab between the settled mountain villagers and now sedentary pastoral shawawiya to the east of the nomadic camel-herding bedouin to the west, rendered their own traditional economy transitional for it incorporated aspects of both mountain and desert adaptations. One adaptation of the Bani Qitab was the seasonal transhumance of households. They moved downstream in the summer toward the town of al-Subaykhi (which they share with the sedentary al-Balush), and upstream towards the mountains in the winter. This movement enabled them to tap a range of environmental niches and pursue an economy based on a mixture of cultivation, small stock raising, and camel herding.

"The processes of change revolve around the temporary migration of men from the families of Wādi Jufrah to find work in the more developed areas of the Gulf..." Initially this labor migration was designed to supplement income from agri-pastoral activity, not to replace it. "However, as the Iqtabis (Bani Qitab) became more acquainted with the benefits of a cash income, this became their primary interest, their flocks and herds becoming secondary." Men withdrew from pastoralism, leaving the animals under the charge of women, children, and the elderly. The numbers of animals kept declined. Most households have only retained a few animals for purposes of hospitality and religious obligation, not for subsistence. Even canned milk is now preferred over that of their livestock.

Birks notes that 73 percent of Bani Qitab males 14 years and older were absent on labor migration, and virtually all income is now in the form of remittances. Of these migrants very few sought wage labor within Oman; almost 70% went to Abu Dhabi, 12% to al-'Ayn (Dubai), and 8% to Saudi Arabia. This may reflect a local identification with bedouin areas of the Gulf rather than with the mountains and coast of the Sultanate. Unfortunately the bulk of the migrants are employed in unskilled positions as laborers, watchmen and domestics, although some have learned to drive and about 18% found military careers.

As a tribe, the Bani Qitab have ceased to be nomadic and are losing the skills which would allow them to return to the traditional pastoralist economy. Furthermore, few migrants have learned trades

which could provide for them at home in the event that the market for their labor declines in the Gulf. Yet for the time being, they value highly their new way of life, pointing "to their Land Rovers, cars, radios, new cloths, pots, and other consumer goods which they now own, and declare that times have never been better". These items are essentially consumptive rather than productive. Remittances have generally not been invested in ways to reduce local economic vulnerability; it is "likely that the population... will pass into conditions of economic and social decline".

Labor Migration, Pastoralism, Rural Economy, Rural Sector, Seasonal Migration, Sedentarization, Social Change.

Birks, J. S. and S. E. Letts
1976 "The 'Awamr: specialist well and falaj diggers in northern interior Oman" Journal of Oman Studies 2:93-100.

This article describes briefly the occupational specialization of the 'Awamr tribe of inner Oman. Nealy all irrigation maintenance and construction which involves underground work or location of water sources is undertaken by teams of 'Awamr men who monopolize these skills as itinerant specialists. The authors discuss technical aspects of falaj maintenance as well as the wage structure and recent trends towards increasing construction of wells. The new popularity of wells has led to greater demand for 'Awamr services and higher costs for the employers. Small falaj communities are unable to compete with wealthier individuals and falaj companies and are unable to meet maintenance costs. A few recommendations concerning cost control are cited.

Development, Irrigation, Occupational Specialization, Rural Economy.

1977 "Diqal and Muqayda: dying oases in Arabia" Tijdschrift voor economische en sociale geografie 68:145-151.

Landlord absenteeims and labor migration have resulted in changes in Omani attitudes towards agriculture. Consequently, investment is being shifted away from small village agricultural-irrigation systems and there has been a widespread abandonment of village sites in favor of larger settlements. This process has, in some places, led to the total abandonment of villages as the remaining inhabitants cannot raise the necessary capital and labor with which to maintain the falaj irrigation channels. Two case studies on the villages of Diqal and Muqayda are presented to illustrate the problem. They demonstrate the shift to a cash economy through labor migration. This new economic base has encouraged a transition in irrigation maintenance responsibility from that of the whole community to the individual. Currently pumps are privately installed and operated for individual benefit.

Irrigation, Labor Migration, Rural Economy, Rural Sector, Settlement Pattern, Social Change.

Birks, J. S. and C. A. Sinclair
1977 "Movements of migrant labour from part of the north of the Sultanate of Oman" Durham, England. The International Migration Project.

This working paper presents a complete review of labor migration in Oman including the history and motives which underlie it. Statistical data, based upon a sample survey, illustrate the age and sex distributions of migrant laborers. Tabultations of migrants' destinations, places of origin, occupations, and length of migrant trips are provided. The implications of migration for the rural sector include the abandonment of pastoralism and the decline of agriculture, the latter involving the amount of land under cultivation, yield, and irrigation management. Changing attitudes towards agricultural occupations have led many returning migrants to seek other occupations or remain idle. Increasing numbers of Asians are employed in Oman to fill the gap in manpower resources. They have worked mainly in construction but are now entering the rural sector and may become a significant element in agricultural labor. The present pattern of migration will probably continue in the future as Omanis seek higher wages and better opportunities.

Agriculture, Economy, Labor Migration, Population, Social Change.

1978 The Sultanate of Oman: Economic Development, The Domestic Labour Market and International Migration. Migration for Employment Project. Geneva. International Labour Office.

This comprehensive document was prepared by two experts in Middle Eastern demography and population movements. To date, it offers the most extensive body of published data on labor migration in Oman.

Section I discusses the overall demographic structure of the nation and provides an overview of the regional labor market and current patterns of Omani migration. In their evaluation of the Omani labor force, the authors state that because of the flow of labor out of Oman, domestic economic growth has relied upon imported, unskilled migrant labor. Consequently, the large rural Omani population has been isolated from the process of national development and the Sultanate has begun to develop a dual economy.

Section II presents the results of the Durham University Census and Household Survey which was carried out in a designated survey region. Specific data was collected on population mobility and migration history. In their analysis of this information, the authors consider the motivations behind labor migration, the mechanisms of population movement and the demographic structure of both the migrant and the non-migrant populations. A detailed

discussion of the impact of labor migration upon Oman's rural sector focuses upon the rural economies of village agriculturalists and mobile bedu and shawawi pastoralists. Agriculture has experienced a qaulitative decline because of a lack of specialized personnel and a decline in irrigation facilities through a lack of maintenance and investment. In addition, a major contraction of the area of cultivation has taken place. The pastoral sector experienced radical decline, to the extent that livestock economy appears to be rapidly dying out in the survey area.

In conclusion Birks and Sinclair predict that the rate of labor migration will continue to rise due to the complex regional factors which characterize the Gulf area economy. They urge the expansion of Omani career and wage opportunities but realistically point out that Oman does not have the resources with which to compete with the wealthier Gulf states in attracting native labor.

Economy, Development, Labor Migration, Population, Rural Economy.

Birks, J.S. and C. A. Sinclair
1980 "The Sultanate of Oman" Ch. 9 in Arab Manpower: The Crisis of Development. New York. St. Martin's Press.

This chapter on Oman discusses the specific problems faced by Oman's recent development program which emphasizes economic development and education. The program is urban-biased at the expense of rural development, despite Oman's dependence on agriculture. Accurate statistics with which to evaluate the potential labor force to be employed on development projects are not available. On the basis of a sample census the authors estimate the total population to be 550,000, but specifics on the demographic structure of the labor pool have to be conjectured. Recently, the government has established new schools and these have largely replaced the traditional Quranic schools. By 1975/6, 55,000 pupils were enrolled and the government expenditure for education had increased to $6.2 million in that academic year. For a variety of reasons not all children attend schools but most who live within a school catchment region do. Zanzibari Omanis educated in English and Swahili, are now studying Arabic and thus have been increasing their participation in the development process.

Although not a capital-rich state, Oman maintains a high level of expenditure. As a consequence, the Sultanate has begun to develop a dual economy to the detriment of the underdeveloped rural sector. Oman's rapid economic growth has been dependent on immigrant labor due to the high rate of Omani labor migration to the wealthier Gulf states. Despite this domestic shortage of labor Omanis continue to migrate to these neighboring countries because wages are higher, opportunities are greater and "easy" work is available. As much as 74% of males aged 14-40 may be absent from their villages. The authors forecast a fall in domestic employment in the near

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future which may be accompanied by an increase in returnees seeking work. Oman's very rapid development has led to rapid inflation and a large population of immigrant workers. It has been anticipated that as the construction phase passes there will be a contraction of the labor market and Omanis may be increasingly disillusioned with opportunities at home. Agriculture, as the future mainstay of the economy needs to receive more direct support in the government's development plans.

Agriculture, Development, Economy, Education, Labor Migration, Population.

Birks, J. S. and C. A. Sinclair
1980a "Economic and social implications of current development in the Arab Gulf: the Oriental connection" in T. Niblock ed. Social and Economic Development. London. Croom Helm. 135-160.

This work is a useful summary of the major trends affecting labor migration in the Arab Gulf states. It discusses the broad regional forces to which Omani labor migration has responded and the economic developments which have drawn upon Omani migrant labor. As a response to market forces, the direction, volume and pattern of international migration are determined by the uneven distribution of oil wealth and economic investment. Since 1975 labor transfers into the capital rich Gulf states have come increasingly from Asian and Oriental populations as a result of: (1) an increase in demands for labor, and (2) active recruiting of cost-effective Asian and Oriental labor.

Economy, The Gulf Region, Labor Migration.

1980b International Migration and Development in the Arab Region. International Labor Office. Geneva. 60-63; 89-90.

While only a few pages in this survey are devoted to Oman, they serve to outline some principal aspects of labor migration. Statistics estimated for total population and absentee labor are: 550,000 and 38,400, respectively, as of 1975. The impact of labor migration into domestic urban centers and abroad has affected the productivity of agriculture in the rural sector and eliminated the pastoral sector as a productive unit. Different employment opportunities have restructured attitudes toward occupational status to the detriment of agriculture and traditional craft production. Migrant Asians entering Oman have replaced Omanis in the lower status occupations including labor associated with the expansion of the modern sector. The authors interpret this trend as one which encourages the development of a dual economy. Investment in the agricultural sector is increasingly difficult to secure. A future drop in oil revenue could leave the

the Omani government unable to revitalize the critical but declining levels of rural production.

Agriculture, Development, Labor Migration, Occupational Specialization, Social Stratification.

Birks, John S. and George A. Mackay
1979 "Economic development and migrant labour movements from the Sultanate of Oman" Orient (Hamburg) 20(2):101-105.

In recent years variations in gross national product per capita have widened in the Middle East and consequently flows of migrant labor have risen. It has been predicted that the current pattern of migration will continue to increase. For an economy with a relatively balanced land-population ratio (although limited in oil and other resources) large-scale labor emigration may be detrimental. In the case of Oman such movement is clearly a hindrance to national plans for economic development.

Oman has had a long history of labor migration but recent rapid development in the oil-rich states has led to labor shortages. Omanis have increasingly been attracted to Kuwait, Qatar, Bahrain, and other countries with low populations and high employment opportunities. In some places Omanis gained preferential employment because of traditional links between Omani traders and fishermen who have historically had contact with these regions. Abu Dhabi now offers the most attractive labor market for Omanis and there 67% of migrant Omanis reside. Here, as in other countries, they make up a significant portion of the armed forces. Less than 1% work in oil-related professions. Manual labor and unskilled jobs are most common and thus few Omanis acquire new skills. Oman has had to import large numbers of foreign workers to compensate for this manpower drain.

Within the Sultanate, per capita income in 1975 was approximately $3,010. Distribution of that income, however, has been highly differential. Income in the modern sector could be as much as ten times that of the traditional sector. Thus the major tasks facing the government include an increase in GNP and personal income, particularly of those in the rural sector. Advancements in education and training could lead to a smooth transition of Omani labor from traditional to the modern sector.

The level of net labor migration from Oman remains a major obstacle to development planning. Swift repatriation of Omanis is dependent upon sufficient wages and employment opportunities within Oman. Yet the disparity in oil production and, therefore, wages, between Oman and its wealthier neighbors will probably increase in the

near future. Also mitigating against Omani repatriation are the extensive future development plans of several Gulf states which will continue to draw upon Omani labor.

Development, Economy, Labor Migration.

Birks, Stace
1978 "The mountain pastoralists of the Sultanate of Oman: reactions to drought" Development and Change 9(1):71-86.

This article describes shawawiya pastoralists' response to drought and cites the following options as frequently sought under these circumstances: (1) reliance upon savings accrued during good years in anticipation of drought; (2) different employment of herd management and marketing strategies; (3) diversification of investment; (4) movement of herd and camp; (5) labor migration among males. These drought strategies are part of a complex process of household decision-making. A variety of other factors may operate to encourage the pastoral household to select the response(s) most appropriate to the specific situation.

Labor Migration, Pastoralism, Rural Economy, Rural Sector, Seasonal Migration.

Bonnenfant, Paul and Colette Le Cour Grandmaison
1977 "The Ibra and Mudayrib area" Journal of Oman Studies 3(2):91-94.

This article is a brief introduction to the areas of Ibra and Mudayrib in the Sharqiya. This overview is a prelude to more detailed reports which discuss the results of the authors' field research. Le Cour Grandmaison's research concentrated on the topics of geneaology, rural communities, and oasis economy in the Sharqiya. Bonnenfant, assisted by Shaykh Salim bin Hamad al Harthi, studied the architecture of Mudayrib.

The Sharqiya, with its port at Sur, once prospered from maritime trade but it is largely bordered by desert. There has been a gradual abandonment of cultivated lands as sand dunes advance, salinization increases and aflaj fall into disrepair. The region of Ibra and Mudayrib is inhabited by twenty-six sub-sections of the Hirth tribe. The Hirth are strongly Ibadhi and belong to the Hinnawi confederation. They have played an important role in the colonization of East Africa and supposedly founded the cities of Mogadishu and Brawa. Large scale immigration to East Africa occurred in the early 19th century during sever droughts in the Sharqiya. Many of these migrants returned and brought both prosperity and African culture to the Sharqiya, much of which is in evidence today.

History, Maritime Commerce, The Sharqiya, Tribes.

Bonnenfant, Paul and Guillemette, and Salim ibn Hamad ibn Sulayman al-Harthi
1977 "Architecture and social history at Mudayrib" Journal of Oman Studies. 3(2):107-135.

This is a substantial work which describes the physical features of Mudayrib, a town in the Sharqiya. A brief review of local tribal history is followed by a discussion of the organization of irrigation in which the local details of water sharing and the role of the falaj company are provided. The architectural section discusses mosques, sablas, fortifications and houses. Each of these constructions is analyzed in terms of: (1) the structure's functions; (2) the history of the persons who contributed to the construction; (3) which sections of the community the structure served; and (4) its current status. Plans and numerous photographs accompany the text. Attention is also devoted to decoration: grated windows, arches, doors, painted ceilings, and poetic inscriptions.

This survey of community institutions and elaborate homes underscores the significance of ties between Mudayrib and East Africa. The ceiling motifs and carved doors demonstrate the continuity of relations with Africa stemming from the period when the residents of the Sharqiya colonized Zanzibar. Many current residents of Mudayrib have lived in East Africa and some continue to build homes in the African decorative style. Cheaper new building techniques however seem to be leading to a decline in decorative detail as they are unsuitable for this style of artistry. This article is very useful, especially for its insights into the social structure of the community through its architecture. It is appended with a large glossary of Omani Arabic architectural terms.

Architecture, History, Irrigation, The Sharqiya, Village Social Structure.

Bowen-Jones, H.
1980 "Ancient Oman is transformed: How the inland and coastal regions may be integrated through new found oil wealth" Geographical Magazine. 52:286-293.

This survey article provides an overall introduction to Oman and its post-1970 development. Emphasis is placed upon changes brought about by Sultan Qaboos. Using historical and geographical background material the author describes socio-economic aspects of the people of Oman including fishing and patterns of sea trade along the coast and irrigation cultivation and pastoralism in the Interior. Inner Oman's tribal organization is also discussed. Bowen-Jones' principal themes are the role of geography in Oman's history and the current economic development based on recent oil revenues.

Introductory.

Brain, Robert
1978 "Transsexualism in Oman" Man 13(2):322-323.

A response to Wikan (1977). Brain suggests that Wikan's approach to the study of the Omani xanith is ethnocentric and lacks a comparative orientation. Homosexuality may be a response to economic competition among males.

Sex roles.

Clements, F. A.
1980 Oman: the Reborn Land. London. Longman Group, Ltd.

This volume is a general survey which provides an up-to-date overview of Oman ten years after the succession of Sultan Qaboos. The author's emphasis is on the processes of development and change which have characterized Sultan Qaboos' administration. Like many western observers he stresses the contrast in ideology between Qaboos and his father Sultan Sa'id bin Taimur and Oman's "emergence" and rapidly growing participation in the world economy. In his assessment of Qaboos' creation of a nation-state government and development of administration and policy he is careful not to criticize the regime. He glosses over the early administrative failures and the heavy expenditures which lack sound fiscal policy in the first years of Qaboos' rule. Clements' optimistic attitude is naive and the book lacks any true evaluation of the results of a decade of socio-economic development. The book is, however, broad in scope and contains much useful information.

Development, Modern History.

Cleveland, Ray L.
1959 "Muscat: capital city of Oman" Middle East Forum 35(9):27-29.

This is a short article describing Oman's geographical position within the Arab world and its regional political geography. The ports of Muscat and Matrah trade dates, fish and fruits with England, India, Pakistan and the Arab Gulf. Trade imports include rice, cloth, coffee, wheat and manufactured items. Cleveland focuses upon the ethnic composition and occupational structure of Muscat. He describes a mosaic of peoples: Arab aristocracy; Baluch immigrants; African servants; and Indian merchants. The Omani education system under Sultan Sa'id bin Taimur consisted of Quranic schools, and a few government schools. Indians support their own schools while the Baluch lack educational opportunities entirely.

Introductory.

Cleveland, Ray L.
1960 "Something different in Arabia: Dhofar" Middle East Forum 36:33-36.

This general introduction to Dhofar highlights aspects of its climate, geography, vegetation and people. Cleveland describes the dress styles of men and women of the Qara badouin tribe. He introduces the reader to their tribal and territorial sub-divisions and their language, Shahari, which is a Semetic language but different from Arabic. It appears to be related to the language of the Mahra people who are also inhabitants of Dhofar. Arab and Arabic speaking tribes, such as the Beit Kathir and the Rashi are also resident in Dhofar and herd camels and goats wtihin their tribally claimed territories. But the rural Dhofari economy is most dependent upon cattle husbandry. Notes on topographical features, archaeological sites and wildlife are also included.

Dhofar, Introductory.

1963 "Oman: tradition and transition" Viewpoints 3(2):14-16.

This is a short, general description of Oman which includes notes on geography, people and the then-current political events. Introductory remarks concern economics, tribalism, language, religion, ethnic groups and history. A few political remarks about the events of Sultan Sa'id bin Taimur's role include his policies concerning modernization and the Imamate.

Introductory.

Cordes, Rainer and Fred Scholz
1980 Bedouins, Wealth and Change: A Study of Rural Development in the United Arab Emirates and the Sultanate of Oman. Tokyo. The United Nations University.

This monograph is a detailed study of the bedouin in contemporary South-east Arabian society. The introduction discusses recent regional developments which have had a significant impact upon nomadic pastoralism. The establishment of nation states with supra-tribal governments, the determination of international boundaries, mechanized transportation and, in some places, the expansion of cultivation are processes which have profoundly affected bedouin subsistence patterns. As a background to the understanding of these changes, the authors provide a detailed outline of thirteen natural and cultural zones which are utilized by pastoral nomads within Oman and the United Arab Emirates. Traditional bedouin migration routes and seasonal movements are discussed in relationship to this ecological framework.

The principle contributions of the monograph are Cordes' case study of the United Arab Emirates and Scholz' case study of Oman. The latter section contains a useful and thorough discussion of the goals and measures which the Omani government has adopted as the basis of its development policy. Planning organizations within the government structure are reviewed along with the articles of the Development Law of 1975. This material on the politics of development is supplemented with an evaluation of the planning base, i.e., Oman's oil dependent economy.

Specific changes among tribes of Oman are reviewed including the constriction in tribal movement and the growth of isolated farm settlements. The wealthy Duru tribe in particular has been rapidly settling and members have been changing their investment strategies as more consumer goods become available. Their economy is almost completely dependent upon employment with the oil company and their life style has been restructured with the large-scale introduction of motor vehicles. Other examples are cited from pastoral tribes of the Batina, Dhofar and the Hajar Mountains. These groups, to a greater or lesser degree, are also adjusting to the effects of modernization, wage labor, and sedentarization. The authors' overall evaluation of the social and economic status of these populations in transition is not positive. They cite several trends which indicate the failure of the bedouin to integrate into the modern economy and the failure of the government to understand their needs.

Development, Ecology, Pastoralism, Rural Economy, Rural Sector, Seasonal Migration, Sedentarization, Settlement Pattern, Social Change, Tribes.

Dawoud, Mahmoud 'Ali
1964 muhaadharaat 'an at-tdatdawur as-siyaasi al-hadeeth liqadhiyat 'Oman (Lectures on the Modern Political Development of the Omani Problem). Ma'had ad-diraasaat al-'arabiya al-'aaliya.

A series of lectures given by Mahmoud 'Ali ad-Dawoud to students of geography and history at the Institute for Higher Arabic Studies. He discusses the Portuguese invasion in 1507, the struggle between Muscat and Oman, and he argues that Muscat and and Oman were always separate states. Using the 1920 Sib Agreement as evidence, he claims that Sultan Sa'id's 1954 attack on Interior Oman and the capture of Nizwa, the seat of the Imamate, was an Al-Bu Sa'id/British conspiracy against Oman.

History, Modern History, Politics.

Donaldson, William
1980 "Enterprise and innovation in an indigenous fishery: the case of the Sultanate of Oman" Development and Change 11(3):479-495.

This article evaluates the role of technological development in the Omani fishing industry since 1970. The failure of large-scale modernization schemes and poor, inadequate analyses of native technology led to recommendations and test projects which were inappropriate. As a result, large-scale modernization schemes did not assist fishermen as had been expected. Rapid development has taken place however through a gradual adoption of modern materials and modification of native technology. Subsequent changes in fish retail and marketing practices proved successful. The author suggests that exposure to new technologies through seasonal work in the Gulf states, individually based innovations, and the new post-1970 era of modernization have led to highly successful decisions and actions initiated by the fishermen themselves.

Development, Fishing, Rural Economy, Marketing.

Doorenbos, Harvey E.
1976 "Post-partum salt packing and other medical practices: Oman, South Arabia" in Francix X. Grollig and Harold B. Haley, eds. Medical Anthropology. The Hague. Mouton Publishers.

Doorenbos was a practicing medical doctor in Oman for many years. In this brief article he discusses a few aspects of women's folk-medicine practices related to childbirth.

Health, Women.

Dostal, Walter
1972 "The Shihuh of northern Oman: a contribution to cultural ecology" Geographical Journal 138(1):1-7.

In this brief theoretical work Dostal distinguishes between adjustments and adaptations of the Shihuh to their environment in the Musadam Peninsula. He defines adjustment as the balancing process of the input and output relationship between culture and environment. He views adaptation as the stabilizer of the cultural structure in response to the influences of the environmental determinates upon certain structural units. Following a description of the most salient features of the environment and a review of basic ethnographic data, the author summarizes the following with classification of phenomena. Adjustments to the environment: the settlement pattern; the independence of the residential community; the seasonal shifting of habitat; the method of house construction; the cultivation of grain, stock breeding, fishing, weaving; and the absence of mosques in the mountains. Adaptations

to the environment: data palm cultivation (21 varieties); preferential exchange of surplus subsistence goods within the residential community; the restriction which permits the sale of holdings only within the group; the accentuation of parallel cousin marriage for economic reasona; the existence of confederations (as integral factors); hostile behavior to foreigners; and the custom of providing water and other charitable donations for the benefit of travellers.

Abstract provided: Anthropological discussions of the relationships between environment and culture (cultural ecology) revolve around the formulation of concepts through which it is possible to reach a better understanding of these relationships. In this paper the author demonstrates his theoretical concept of an eco-cultural set of interactions through an analysis of some aspects of the Shihuh culture. Basing his observations on recent field-work in Oman he outlines the main processes of the eco-cultural pattern: adjustment and adaptation.

Ecology, Fishing, The Musandam, Pastoralism, Rural Economy, Seasonal Migration.

Dostal, Walter
1975 "Two south Arabian tribes: al-Qara and al-Harasis" Arabian Studies 2:33-41.

The author presents a short description of the non-Arabic speaking al-Qara and al-Harasis tribes of Oman based upon interviews with young migrant tribesmen. The al-Qara are semi-nomadic natives of the Jebel Qara and Jebel Qamar of Dhofar. They are Sunni and belong to the Ghafiri confederation. The author cites a list of tribal and sub-tribal sections as well as providing kinship terminology. Marriage, parallel cousin preference, bride price and post marital residence data are presented. Primarily cattle and goat breeders, the al-Qara engage in rainfall agriculture as a secondary source of income.

The al-Harasis tribal area borders the Duru and al-Wahibah lands. They are Sunnis and have affiliated with the Hinnawi confederation. Sub-tribal divisions and kinship terminology are presented. Marriage customs include parallel cousin preference and brideprice. The al-Harasis are mostly nomadic but some own palms in village settlements. They depend heavily upon camel and goat husbandry for their income.

Dhofar, Pastoralism, Rural Sector.

Durham University

1978 Research and Development Surveys in Northern Oman. Final Report. Vol. 2. "Water" Durham, England.

This volume is a comprehensive scientific evaluation of the water resources of Oman and the current patterns of water usage. In 1975 a Durham University research team selected a survey area for exhaustive study. This region bisected the Batina Coast, the Hajar Mountains and the Dhahira district of the Interior. The study details the hydrology of each of these eco-zones and the current methods of water management. The thorough evaluation of water resources and potential make this document essential to future planning of rural development programs.

The authors have investigated the advantages and disadvantages of all forms of water management known to the survey region including mechanized pump well exploitation. Their careful consideration of land tenure systems, water distribution and labor are based upon a solic familiarity with the cultural aspects of the Omani landscape. The successful integration of scientifically collected and analyzed hydrological data with the socio-economic needs of the population emerges in an appendix. Here the authors outline recommendations for rural development programs and the administrative framework through which they might be carried out. This is an excellent scholarly and scientific work which shows considerable depth of understanding for the social and technolcgical needs of the people of Oman.

Agriculture, Development, Irrigation, Rural Economy, Rural Sector, Social Change.

1978 Research and Development Surveys in Northern Oman. Final Report. Vol. 5 "Fishing and fish marketing" Durham, England.

This volume provides a detailed and concise analysis of a wide range of aspects of Oman's fishing industry and fish marketing. In contrast to earlier proposals for the development of large-scale commercial fisheries, the Durham study examines small-scale fishing enterprises as the basis for fishery development. Present methods of fishing and fish marketing provide the foundation for the Durham analysis of quantative and qualitative fishery improvement.

Section 1 of the volume contains: (1) the results of formal and informal interviews with fishermen; (2) interviews with merchants; and (3) observations. Detailed information is presented on: (1) contemporary fishing methods and equipment; (2) an estimation of the fisherman's costs and income; and (3) an estimate of the size of the fishing work force and its total capital investment in equipment.

Section 2 deals with fishing methods and tackle. Details of usage, nomenclature, costs and distribution of traps and lines are provided. Generally, Batina fishermen use all of these equipment types but nets and traps yield the majority of the catch. The general forms of fishing technology are utilized by all fishermen but the specific types of equpment, methods and nomenclature vary widely between settlements. The total sum of fishing tackle in use shows that a large amount of capital investment is associated with the industry.

Section 3 is a detailed description of boats and boat engines. The researchers estimate that there are between 825 and 1,000 wooden boats within their survey area. Wooden boat owners usually own a single craft and tend to be fishermen themselves. Sharing in boat ownership is not common. Boat crews, usually around 3 men, are often members of the same household. In the last decade large numbers of all-purpose seacraft have come into use, of which 85% are motorized. Of these, the smaller, less expensive boats are twice as common. Two types of motors are employed: (1) the inboard diesel engine; and (2) the outboard petrol motor. The diesel engines are more expensive but last longer and incur lower operating costs than the outboard engines. The lack of expertise for repair and servicing of the motors is critical and fishermen loose much productive time when parts or repairs are needed.

Section 4 discusses the fishermen: fishing settlements; employment and migration; costs and returns; and numbers of fishermen. Approximately half of the Batina fishermen also derive some income from gardens. More than a third of them work seasonally in the fishing industries of the Gulf states. Many rely upon this income or income assistance from relatives to meet subsistence level income requirements.

Section 5 provides a list of fish species, followed by an examination of fish marketing and distribution, both on the coast and in the Interior. Only a small number of fish species are regularly caught in large quantity, although approximately 100 species have been recorded along the Batina. Fish catches from the Batina have been declining in recent years and fish surpluses are now infrequent. Interior Oman receives fish imported from Dubai and the south-east coast of Oman. Paved roads connecting these coasts with the Interior and motorized transport have now made fresh fish available in inner Oman where previously only dried and salted fish could be found.

Development, Economy, Fishing, Marketing, Rural Sector.

Durham University
1978 Research and Development Surveys in Northern Oman. Final Report. Vol. 6 "Marketing" Durham, England.

This volume of the Durham Survey reports covers five aspects of marketing in Oman: (1) the Khabura suk: a case study; (2) the Ibri suk: a case study; (3) marketing: a food price survey; (4) marketing of limes on Batina; and (5) the Bidaya development.

The Khabura suk: a case study. The patterns of ownership and tenancy of the Khabura suk are not typical because of: (1) the small number of owner-occupied establishments and the large number of separate landlords; (2) the dominant role of the Ja'afari (Shi'a) community and its waqfs in the suk; and (3) the increasing intrests of shaykhs as suk landlords and developers with the simultaneous decline of the waqfs. With the introduction of new construction materials, rents in the suk have risen between 1975 and 1976 by 38.11%. The spatial distribution of rents was also shifting at that time as increased suk activity led to higher rents in the most optimal parts of the suk.

A classification of types of enterprises in the suk demonstrated that shops of the Khabura suk, as in most suks outside of the Muscat/Matrah area, lack specialization and sell a wide range of goods. Another classification system was developed to study the volume of trade per shop. Supply patterns illustrate the primary position of imported wheat and rice from the United Arab Emirates via Dubai. A very small portion of commodities found in the suk come from the region of Khabura itself, except fish. Most non-food items also enter Khabura from Dubai. Tinned and packaged foods are traded from both Dubai and Muscat/Matrah. Only some specific commodities such as textiles are brought to Khabura in larger quantities from the Capital Area than from Dubai.

Long term personal trade relations exist between Dubai merchants and Khabura traders. Free credit and periodic payment of bills are the norm. Consumer relations with shopkeepers vary but short term credit and periodic payment of bills are the norm. Uniformity in pricing suggests that trading is not highly competitive. Profit margins vary considerably from load to load and seller to seller.

The recent and rapid changes taking place in the Khabura suk are reflected in new building construction, repair of older buildings and a large and sudden increase in the number of sellers. The suk has not yet been able to adjust itself however to the new commercial and social circumstances. The controlling influence of the minority remains. Higher rents, prices and wages have all developed in recent years.

The authors make a number of recommendations. Government policy should continue to support local sanitation and develop a program of assistance for local small scale industries. Competition among traders should be encouraged as an alternative to price controls. Local banking facilities could assist in the expansion of credit.

The Ibri suk: a case study. The Ibri suk differs from the Khabura suk in several respects. Ibri is larger and functions as a major service center. Shops and services offer a broader range of commodities resulting in greater specialization among sellers. As a main trade center for the Duru bedouin it is the focal point for a larger sphere of commercial activity, beyond its imemdiate environs. Ibri also supplies subordinate suks and serves nearby settlements without suks.

The proportion of owner-occupied shops is higher than in Khabura and Ibri is not commercially dominated by a small group of large scale traders. Exchange in Ibri is still organized through public auction although some changes are evident in the physical structure of the suk. The expansion of suk facilities and the introduction of new building materials have been the hallmark of suk development since 1970. The greater degree of government involvement in the affairs of the suk has led to improved selling facilities for food items.

The authors suggest that despite the availability of credit, the whole community could benefit from the establishment of local banking services.

Marketing: a food price survey. The price survey of the Khabura and Ibri suks (1974-75 and 1975-76) demonstrated a general decrease in prices of most items considered in the study. The data suggests a fall in the main bulk food commodities: rice, wheat grain, wheat flour and suger. Tinned and packaged food price trends were ambigious. Yet the overall trend of falling food prices stands in sharp contrast to the world-wide inflation level.

Marketing of limes on Batina. The rapid rise in prices for dried limes prior to 1975 is not expected to continue. Decreasing profitability is beginning to effect intermediary traders and the exporting merchants. Export bulk therefore is expected to decline. Export merchants in the lime trade are now diversifying their commercial interests. With respect to the anticipated decline in the export of dried limes, the authors suggest alternative commercial processing of the fruit. Small-scale lime-juice enterprises could serve local economic development. Residues could be used for fodder.

The Bidaya development. With the paving of the Batina road in 1970, local entrepreneurs in the settlement of Bidaya opened

cafe-restaurants, motor vehicle garages, shops, a clinic and other businesses. The convenient location of Bidaya helped the developing Bidaya suk to become prosperous but the role of local businessmen has been the critical factor in its development. The authors have interpreted this process as proof of the availability of private capital and the willingness of capital owners to invest in non-agricultural rural enterprises.

Concluding the volume are a number of points raised by the authors. Merchant and trading businesses are widespread in Oman and the market is highly active. Historical trade networks, both international and domestic, have strengthened with technological development. The import market plays a significant role in markets of all levels. The demand for consumer imports in part is a function of extra-locally derived incomes (remittances). The current trend is toward widespread financial investment in trade facilities including: buildings; vehicles; stock; credit systems: manpower; and production. But the authors also point to a need for the development of domestic production potential in agricultural products and manufactures.

They recommend that government involvement in marketing outside of Muscat/Matrah should be positive and direct. They cite the need for: (1) improvement of local and regional infrastructure; (2) fiscal and administrative encouragement to private investment in entrepreneural and productive enterprises; (3) utilization of facilities of the Development Bank of Oman to assist small and medium scale market-related production possibilities in the private sector; and (4) indirect or no government involvement in pricing.

Development, Economy, Marketing, Rural Economy, Rural Sector, Village Social Structure.

Duster, Joachim and Fred Scholz
1980 Bibliographie uber das Sultanat Oman. Hamburg. Deutsches Orient Institut Dokumentations.

This is one of the two most complete and up-to-date bibliographies for Oman. Its bi-lingual index, duplicated in English and German, serves as a guide to topically arranged references. The major subject headings include: General Information; Economy; Socio-economic Factors; Contemporary History since 1920; History; Travel; Culture; Climatology and Meteorology; Geology and Geomorphology; Natural History; Arabian Peninsula/Arabian Gulf. The sub-headings provide more detailed guidance and works are cross referenced. An author index and Oman Treaty Index are provided. There are some omissions within citations so further

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checking may be necessary for some of the references appear to be unverifiable. The publisher does, however, offer to provide information on source locations of any references requested.

Reference.

Dutton, R. W.
1980 "Some analyses of growth and productivity of the project goats and sheep, January 1977 to June 1979" Durham University Khabura Development Project. Preliminary Reports, Vol. 1B. Livestock-Productivity No. 1.

Abstract provided: By June 1979 the D.U.K.D.P. had expanded its herd of goats and sheep until it held more than 110 head on 1.4 ha of forage.

The project was trying to devise a stock system suitable for the small farmer, whereby the stock would be significantly more productive yet easy to manage.

Omani breeding goats and sheep were bought by the project. They were mated with Omani males to produce pure Omani kids and lambs. The goats have also been mated with imported Anglo-Nubian males to produce cross-bred kids. Seeing the good progress of the cross-bred kids, neighbouring Omani farmers had brought in over 40 of their she-goats for mating, by June 1979.

The purchased breeding stock improved the condition and body weight during the first year they were on the property, the goats by almost 20%. This was reflected in a marked increase in the proportion of goats and sheep twinning and in the total kid weight at birth. Both goats and sheep by then were producing young at the rate of three to six per two years.

The kids and the lambs born on the project gained weight relatively rapidly, passing the weight of their own mothers when they were only 30-35 weeks old. This is a good indication of the degree to which the stock in Oman under shāwi management is stunted, and consequently under-productive.

The cross-bred kids grew at almost the same rate as the Anglo-Nubians and, it appears from the slight evidence so far available, considerably faster than the Omani kids. This is an encouraging indication of hybrid vigour.

The cross-bred kids under the management of some of the project's Omani neighbours, and villagers, were growing almost as rapidly as the cross-bred kids on the project. These Omanis only have a

few head of stock, reared on a domestic basis, but their results show that they have the necessary interest to rear animals successfully. They are people, therefore, who might be encouraged to attempt a small-farm system, such as the project's sytem, with 100-200 head of stock, and make a success of it. Before this happens, however, more results from the project are required, both for productivity and economic viability.

Livestock, Small Ruminants.

Eickelman, D.
1980 "Religious tradition, economic domination and political legitimacy: Morocco and Oman." Revue de l'Occident Musulman et de la Mediterranee 29:17-30.

This essay, as the author states, has two goals: (1) to analyze the inter-relationship between religious tradition and policy in Oman; and (2) to analyze the concept of "traditional Islam" as used by Binder, "...the mainstream of Islam in history and in politics." The author feels that because of Oman's historical isolation it is a perfect place to study the meaning of Islamic tradition. Morocco is presented as a contrast. It is argued that any assumption of a homogenous "traditional Islam" is inappropriate because Islam is influenced by the sociohistorical context in which it exists.

Politics, Religion.

Ennion, Hugh
1965 "Bringing water to the desert." Country Life, September 23:779-880.

This is a general article which describes the environment of Oman and the development of the falaj system of irrigation. It includes a brief but detailed and useful description of the techniques of levelling and surveying used by specialized falaj repair and extension workers. This is accomplished with the simple technology of string, poles and water drops but yields remarkable accuracy. A general description of water management concludes the article.

Irrigation.

Falcon, N. L.
1973 "The Musandam (northern Oman) expedition 1971/72." Geogrpahical Journal 139(1):1-19.

This is one of two summary reports on the Musandem Peninsula in which the results of a three month scientific expedition are summarized. Abstract provided. (Some cultural data regarding the Shihuh inhabitants are contained on page 3.)

The Musandam expedition spent three months in the northern part of Northern Oman, which includes the Musandam peninsula and its remarkable drowned valleys. The expedition's main objective was to obtain data on the Quarternary history of the area. Other objectives were geological, hydrological (including detailed tidal recording), topographical, biological collecting, and the mapping of the narrowest part of the narrow isthmus which joins the Musandam peninsula to the main promontary of Northern Oman. A geophysical (sparker) reconnaissance survey was made of the inlets, and archaeological sites were examined.

Ecology, The Musandam.

Feuerstein, G. and S. al-Marzooq
1978 "The Omani xanith." Man 13(4):665-667.

The authors suggest that more data is needed before an adequate explanation of the presence of xunoth can be offered. They assert that this is a complex phenomenon and that the economics and ethnicity of the context have to be studied before anthropologists will be able to fully develop a hypothesis.

Sex Roles.

Fisher, W. B. and H. Bowen-Jones
1974 "Development surveys in the Middle East." Geogrpahical Journal 140:454-466.

This is a preliminary report of the Durham University (England) research program in Oman. It contains a detailed description of the operationalization of a localized regional geographic study as the prologue to future development programs in Oman. Coordination of different branches of natural and social sciences has been achieved in order to measure current land and resource use as well as future potential in each major environmental zone of Oman. The author raises important questions about the relationship of cultural factors in patterns of land utilization.

Development, Ecology, Rural Economy, Rural Sector, Settlement Pattern.

Gray, Audrey Ward
1973 Oman: A Selected, and Annotated Bibliography. The Ford Foundation, Beirut.

This brief annotated bibliography contains references of general interest in the fiels of social and economic development. Section headings are: Books; Magazine and Journal Articles; and Government and United Nations Publications. Some historical works are

included as well. The author's purpose in preparing the bibliography was to compile publications in English which were recent at that time, as an aid to persons involved in Oman's development. Although dated, this work remains a useful introduction to Oman and the policies of Sultan Qaboos' government.

Reference.

Haafidh, Hamdi and Mahmoud ash-Sharqaawi
1969 Qadhiyat 'Oman (The Omani Problem). Masr. Daar al-Kaatib al-'Arabi lit-tiba's wannashr.

Deals mainly with the Imamate/Sultanate conflict in Oman. The Imamate claim is strongly supported in the book.

History, Ibadhi Imamate, Politics.

Hawley, Donald
1977 Oman and its Renaissance. London. Stacey International.

A visually pleasing and elegantly presented book on the socio-economic history of Oman. Written by Britain's first ambassador to Oman, the book is full of useful information on such topics as history, people, culture and religious beliefs. The last chapter, compiled by the publisher's staff on Oman's renaissance describes the country's achievements since 1970. The book contains many maps, diagrams, and illustrations in color.

Development, Economy, Modern History, Religion.

Heard-Bey, Frauke
1972 "The Gulf states and Oman in transition." Asian Affairs 59:14-22.

Recent changes in the Omani and Gulf state economies are reflected partly in a government creation of demand for development facilities, especially schools and hospitals. There is a growing horizontal disparity between poor and wealthy Arab states. In Oman, vertical internal stratification is increasing with the sharpening differentiation between: (1) foreign unskilled labor; (2) returning educated Omanis; and (3) the tribal labor force. Omani expectations are changing as are the relations between these classes and the state. The writer emphasizes the relationship of tribal groups to oil companies and new patterns of cash flow among wealthier tribesmen. She evaluates the uneven distribution of oil wealth and uneven rates of social development as future potential for political instability.

Development, Economy, The Gulf Region, Social Stratification.

Heard-Bey, Frauke

1972a "Social changes in the Gulf states and Oman" Asian Affairs 59(3):309-316.

This article deals with political science issues. The author discusses the problems facing the emerging nations of the Arabian Gulf who are establishing an identity and a future independent from colonialism and poverty. She raises the question of modern legislation in Islamic countries and asserts that the constitutional frameworks of these nations have to be assessed for their relevance to Islamic and Arab conceptions of state and society. Western legislative models cannot be merely imported. In Oman the roles of the Sultan and the provincial walis still constitute the foundations of government, as they have traditionally in the past. On the premise therefore that Oman is essentially a tribal and Islamic society, she identifies two factors which would specifically hamper the implementation of a western constitutional government: (1) law is vested in the leadership (the Sultan, religious leaders, etc.); (2) the tribes have the freedom to form confederacies She points to the dilemma between insufficient stability in the present tribally based Islamic government and the lack of relevance of western constitutional systems. This situation is particularly volitile in the context of potentially socially disruptive economic changes and the danger of imported revolutionary movements.

The Gulf Region, Law, Politics, Religion.

1974 "Development anomalies in the bediun oases of al-Liwa" Asian Affairs 61(3):272-286.

This study of socio-economic patterns in the al-Liwa desert region of Abu Dhabi illustrates seasonal migration patterns among beduin populations who rely upon a combination of subsistence strategies: date palm cultivation in oasis; camel herding; and, at one time, pearl fishing as well. The latter has been replaced by employment either in urban centers or with oil companies in desert locations. The role of cash in the traditional economy, changing patterns of investment, and, the new role of the tribal shaykh as an employment broker are all aspects of the contemporary transition. This study appears to be directly relevant to the situation of Omani bedouins as well.

Development, The Gulf Region, Labor Migration, Rural Economy, Seasonal Migration, Social Change.

Hewett, Anthony and Mary Diamanti
1973 "A new dawn for Oman and its women." UNICEF News 76:26-30.

Brief, personal notes of two UNICEF representatives regarding health and women in Oman and the establishment of the first UNICEF program there in 1971. In the designing of a program to assist mothers and future mothers, an effort was made to understand the role of women in Omani society as comprehensively as possible. A socio-anthropological survey was developed in order to perceive the attitudes of women towards disease, health and child bearing. The survey collected a range of data on: demography; education; employment; marital status; fertility; child brith practices; nutrition; disease; sanitation; land tenure; and property ownership. The results demonstrated patterns of domestic decision-making, authority and responsiblity and were the basis for the UNICEF child-care program.

Health, Women.

Ingrams, Doreen
1975 "Oman" in Ann Deardon, ed. Arab Women. London. Minority Rights Group, 13-14.

A general description of contemporary women in Oman. Ingrams emphasizes the increasing educational facilities for women and girls. She cites national enrollment at 8,000 female students in 1974 compared with 1970 when there were no public school facilities for females. Women have also taken advantage of new health facilities and developed confidence in modern medicine. Increased media exposure through television has probably had an impact on social and family values. A growing class of Omani professional women has been joined by expatriate Omani Zanzibar women and others from the sub-continent and the central Middle East.

Education, Health, Women.

Johnstone, T. M.
1975 "Oath-taking and vows in Oman" Arabian Studies 2:7-17.

This work is a brief examination of the social roles of oaths and vows as recounted by Dhofari men. Oaths between men and tribes have an important function in guaranteeing safety of travel. The oath is considered binding and an oath breaker will be ostracized from his own community and denied protection. Vows, however, are usually made between an individual and a saint and consist of contracts for either payment in cash or fulfillment of promises in exchange for assistance with a particular problem. In Johnstone's view transitional Dhofari society will soon reject the spoken word as having power because of increasing literacy.

Dhofar, Law, Rural Sector, Social Values.

Kabeel, Soraya M.
1975 Source Book on Arabian Gulf States: Arabian Gulf in General, Kuwait, Bahrain, Qatar, and Oman. Kuwait University, Libraries Department.

This reference work consists of three parts. Part One is an Introductory Survey in which each of the Gulf states is described briefly. In the several pages devoted to each country, the following topics are covered: geography and location; area and population; climate; history and politics; economics and petroleum; petroleum policy; trade; and social welfare. Part Two consists of a substantial bibliographic survey organized according to classified subject headings: general references; periodicals and bibliographies; economics and petroleum; government, politics and foreign relations; social conditions and welfare services; history; geography; geology and oceanography; and agriculture, water, botan, zoology and other sciences. In each of these classifications entries are arranged by sub-heading according to country. The entries cover a range of European languages (non-English titles are translated into English) but do not include works in Arabic. Journal entries are particularly numerous, especially those drawing upon political, economic and petroleum periodicals. Part Three is a general index in which the author, title and subject are arranged in a single alphabetical sequence.

Reference.

Kelly, J. P. "A prevalence of furies: tribes, politics, and religion in
1970 Oman and Trucial Oman." in Derek Hopwood ed. The Arabian Peninsula: Society and Politics. London. George Allen and Unwin, Ltd. 107-141.

This article discusses the interrelationships between tribalism, politics and religion in Oman. Kelly argues that two forces have shaped and directed the political structure of Oman: the Ibadhi/Sunni religious division that goes back to the second century A.H. and the Ghafiri/Hinnawi political factionalism among the tribes. A very lengthy discussion of the Imamate/Sultanate conflict and of Ibadhism is included.

History, Ibadhi Imamate, Politics, Religion.

King, R. and J. H. Stevens
1973 A Bibliography of Oman 1900-1970. Occasional Papers Series No. 2. Centre for Middle Eastern and Islamic Studies, Durham, England. University of Durham.

This short selected bibliography cites the most easily accessible major works on Oman written in European languages. It includes mostly twentieth century references in the following three major

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categories with sub-headings: (1) physical environment - geology, geomorphology, soils and bio-geography, climatology and meteorology, hydrology and water resources, oceanography; (2) the people - anthropology, archaeology and early history, history, nomadism and settlement, fishing and seacraft; and (3) medical and economic development - oil, trade. This is useful as an introductory bibliography.

Reference.

Landen, Robert Gern
1967 Oman Since 1856: Disruptive Modernization in a Traditional Arab Society. Princeton. Princeton University Press.

This volume is a social and political history of Oman. The author discusses the history of the Ibadhi Imamate and its relationship with Britain, India and Africa including Zanzibar. He also reviews the complex ethnic and religious background of the Ghafari and Hinnawi confederations and considers the political implications of these moieties. Shifting patterns of tribal allegiance and the relationship between the tribes and the state are described as well. As a background to the contemporary situation, Land presents the historical factors underlying the split between the Imamate of Oman and the Sultanate of Muscat and Oman. The reunification of Oman, issues of oil rights, and the Buraymi Oasis dispute are also discussed.

The Gulf Region, History, Politics, Tribes.

Le Cour Grandmaison, Colette
1977 "Spatial organization, tribal groupings and kinship in Ibra" Journal of Oman Studies 3(2):95-106.

This study of social structure at Ibra is a major contribution to the ethnographic literature of Oman. Although brief it is a valuable social counterpart to Wilkinson's analysis of village water distribution (1977). The author describes the regional distribution of settlements as a function of hydrology and social relations. Within the settlement she asserts that the falaj, security and social organization are the three determinants of rural spatial organization. Ibra is a bi-partite community in which the Hirth tribe occupies Ibra Sufala (the lower settlement) and the Masakira tribe occupies Ibra Alaya (the upper settlement). Boundaries and fortifications mark each community as a separate entity and each supports its own irrigation system. Water sharing is within a settlement and supervised by an individual who has no kinship affiliation with the members of the falaj company. Usually water is shared among groups between whom there is high potential for hostility, such as between adjacent, mutually fortified neighborhoods within a village.

Le Cour Grandmaison examined three neighborhoods in Ibra Sufala in detail and found each to have distinct characteristics in terms of occupation and standard of living. Her analysis of economic relationships reveals that the wealthy who hold land and water rights are a minority. The work force is composed mostly of landless peasants who carry out agricultural and maintenance tasks in exchange for a subsistence or below subsistence income. Many families have a member who is absent working for higher wages outside of the village agricultural sector. The author stresses the falaj as a community institution and concern despite the fact that most people do not own shares. Neighborhood cohesion depends upon relationships built around water. Within the neighborhood, family structure is a strong cohesive unit of production and includes parents, married sons and sisters who, divorced or widowed return home.

Neighborhood autonomy is based upon social structure. Alliances between clan sections sharing a quarter, or clan and client group co-residence and family units organized as agnatic cells and emphasizing kinship endogamy characterize the neighborhoods. When a quarter owns a falaj that ownership contributes to their autonomy, others share water and are welded into larger social units. She concludes that despite the division within oasis settlements these communities are well integrated societies mostly through community administration of water.

Irrigation, Rural Economy, Rural Sector, Sex Roles, Social Change, Social Values, Village Social Structure, Women.

el-Mallakh, Ragaei
1972 "Economic requirements for development, Oman." Middle East Journal 26(4):415-427.

With the development of oil Oman's economy is moving towards a more clearly defined base. Sultan Qaboos' development policies are based upon oil income, but are dependent for their success upon national unity. Coherent and integrated government departments must be established in order to pursue development with efficiency. The emergence of Oman as a participant in regional affairs and a member of international institutions is helping to unify Oman by giving it a national identity. The oil industry has impacted Oman in four ways: (1) direct payments to the government; (2) expansion of Petroleum Development (Oman) Ltd. expenditures within the country; (3) new employment opportunities; and (4) training and basic social services. Oman is confronted with the need to develop basic economic and social infrastructure and has chosen to emphasize communications (roads and ports). Advances have also been made in education and medical services. The Dhofar rebellion has been a major drain on the economy as money needed for development was

spent on military supplies. The major thrust of Oman's economic policy is to attract capital investment to the private sector from both domestic and foreign sources.

Development, Economy.

Melamid, Alexander
1954 "Oil and the evolution of boundaries in eastern Arabia." Geographical Review 44:295-296.

The discovery of oil and competition for oil concessions and development has led to the abandonment of the concept of neutral areas of the Gulf region. The significance of Buraimi Oasis has stimulated controversy between Oman and neighboring states, thus propagating the negotiations for establishing boundaries.

Development, History, Politics.

1957 "Boundaries and petroleum developments in southern Arabia." Geographical Review 47:489-491.

This brief comment raises the problems associated with the Buraimi Oasis dispute and the establishment of international boundaries in south-east Arabia. The problem is complicated by the controversy over the dissolution of the Imamate in 1955 and Saudi Arabia's refusal to recognize the jurisdiction of the Sultanate of Muscat and Oman over the Imamate territory.

Economy, Politics.

1962 "Transportation in eastern Arabia." Geographical Review 52:122-124.

The introduction of motorized transportation in eastern Arabia has brought swifter means of communication and changes in the political structures. In Oman local warfare declined sharply and the Sultan, in 1955, was able to extend his rule over the Interior. With the deposition of the Imam and the liquidation of the Imamate state, Sultan Sa'id bin Taimur was able to consolidate and centralize his authority as the Sultanate of Muscat and Oman. The author provides a catalogue of the roads passable by motorized transportation in the year of publication.

Development, The Ibadhi Imamate, Politics.

1965 "Political boundaries and nomadic grazing." Geographical Review 55:287-290.

The ranging territories of pastoral nomads vary with changes in rainfall patterns. Social groupings are the basis of pastoralist loyalties, not circumscribed territorial units. The discovery of

petroleum resources have radically changed land values and the attitudes of political entities towards their territorial integrity. Disputes resulted among the Gulf states and Oman over the appropriate criteria for justification of territorial claims.

Development, Economy, Pastoralism, Politics.

Mellor, P. S.
1978 "Biting flies attacking cattle in the Dhofar Province of the Sultanate of Oman." Tropical Animal Health and Production 10(3):167-169.

A report on a brief visit to Dhofar in August 1977 to collect and identify specimens of a "black-fly" which attacked local cattle so intensely at certain times of the year that they were unable to graze in the open during daylight hours, requiring pasturing animals at night. The flies, identified as Lyperosia minuta, with a much smaller number of Musca crassifostris, appear active only during the monsoons, and hence are referred to as khareef flies, from the Arabic word for the rainy season. Control methods in other areas have had only a limited success. Careful spraying with selected insecticides might prove useful, but the difficult terrain of Dhofar makes efficient application problematic.

Livestock.

Mertz, Robert Anton
1972 "Sultanate of Oman" in Education and Manpower in the Arabian Gulf. Chapter 2:37-109. Washington, D.C. American Friends of the Middle East.

Mertz' comprehensive description covers factors relevant to the planning of educational and technical assistance programs in Oman. Planning in a wide range of areas can benefit from this analysis including: economic resource development; development programs in progress; agriculture and fisheries; petroleum revenues; development of the educational system; cultural heritage and folklore; structure of the labor force; and the needs of the rural sector. The report contains itemized information on the training and educational requirements of the different ministries and departments of the government within a 3-5 year range of the date of publication. The author discusses priorities of the university education programs (including graduate studies) established by the Ministry of Education in the allocation of scholarships. In addition, the report contains a comprehensive survey of the manpower resources in the modern sector of Oman at the time of publication. The results of the survey provide a statistical basis for evalua-

tion of the 1972 development progress and potential of Oman. Recommendations concerning priority technical assistance projects and the development of most urgently needed expertise and institutions conclude the report. Although dated, this work contains valuable information and resources pertaining to the initial development of Oman.

Development, Economy, Education, Population.

Mihayl, Marion
1969 The Changing Status of Women in the Middle East: A Statement of Cultural Change. Greeley, Colorado. Colorado State College, Museum of Anthropology. Miscellaneous Series No. 6.

An out-dated ethnocentric evaluation of the common Muslim practice of purdah (seclusion of women), from a western point of view. Discussion of Quranic literature pertinent to women. The roots of change in contemporary female status in the Middle East are traced to education and exposure to western values. Progress is also attributed to those Muslim national leaders who publically rejected the veiling of women and other symbols of purdah. Examples are drawn mostly from Lebanon, Iran, Iraq, Morocco and Turkey.

Sex Roles, Social Change, Social Values, Women.

Peppelenbosch, P. G. N.
1968 "Nomadism on the Arabian peninsula: a general appraisal." Tijschrift voor Economische en Sociale Geografie. 59(6):335-346.

This review of the fully nomadic Arab camel breeding population of the Arabian Peninsula includes descriptions of the characteristics of bedouin life as presented in the literature and the nomadic environment of the Arabian Peninsula. Peppelenbosch defines pure nomadism as traditionally dependent upon income from three sources: (1) camel breeding and selling; (2) raiding and procurement of "protection" payments; and (3) caravan guiding. Motorization, pacification, and mechanization of agriculture are among the factors contributing to a decline in bedouin income, a problem which has reached crisis proportions. Sedentarization is often urged as an alternative subsistence pattern but the author urges continued use of the nomadic environment through range management and a shift to sheep and goat herding.

Development, Ecology, Pastoralism, Rural Economy, Rural Sector, Sedentarization.

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Peterson, J. E.
1977 "Tribes and politics in eastern Arabia." Middle East Journal 31(3):297-312.

Oman and the United Arab Emirates have experienced a fundamental evoluation in political character from that of a coalition of tribal territories to the development of nation states. As the tribal political system was confronted with the trend towards the development of a modern state there has been an evolution of ruling families from within the sphere of tribal leadership. This incorporation of traditional practices within modern governments has contributed to a sense of continuity. Oman's Interior Imamate was led by a religious Imam whose office was modeled after that of the tribal shaykh. In the mid 18th century the Al Bu Sa'id dynasty relinquished interest in tribal politics and came to rule a coastal maritime empire. The Interior continued to be ruled by a triumvirate consisting of the Imamate and the leaders of the Hinnawi and Ghafiri confederacies until 1959. Although the state has replaced the tribe as the primary political unit it still relies on tribal components, particularly in the institution of the ruling family. A shaykhly elite is allied with the ruling family through subsidies, intermarriage and the distribution of government posts. The structure of tribal politics has changed as shaykhs receive government positions and assume the role of labor brokers (where local development has occurred). In Oman the degree to which tribal organization and tribal confederacies effect national policies is rapidly declining.

History, The Ibadhi Imamate, Politics, Tribes.

1978 Oman in the Twentieth Century: Political Foundations of an Emerging State. London. Croom Helm.

This book is a political history of the twentieth century Sultanate and Imamate but Peterson carefully includes the events of the nineteenth century which influenced later developments. The book is divided into two parts. The first part covers a series of topics that illuminate the political history of the country: tribal politics, religion, administration, the Al-Bu Sa'id dynasty and external influence especially the roles of Britain and India. The second part deals with the challenges that the Sultanate faced after the Al-Bu Sa'id rise to power: the Imamate/Sultanate conflict, the Jabal al-Akhdar revolt, and the war in Dhofar. The book is weakest on the current regime of Sultan Qaboos for it contains very little analysis of the post-1970 changes in government structure and policy.

History, Modern History, Politics, Religion.

Phillips, Wendell
1966 Unknown Oman. London. Longmans.

A book based on the author's own archaeological expeditions and travel in different parts of Oman. The book deals with various, often unrelated topics: geography, politics, history, religion, customs, women, etc. It largely portrays a prejudiced but patronizing view of Arab/Islamic culture and tradition. The main importance of the book lies in its historical interest since it deals with a period--late 1950s--when Oman was largely closed to the outside world.

Introductory, Reference.

1967 Oman: A History. London. Reynal & Co.

This book is a general history of Oman. It is easily read, well illustrated and provides a good basic introduction to Omani history.

Introductory.

Saleem Khan, M. A.
1974 "Oman: an Ibadhi-tribal-monarchic syndrome." Islam and the Modern Age 5(1):71-90 and (2):52-70.

Saleem Khan presents his interpretation of the transition from democratic principles to hereditary succession in early Islamic politics. The Khariji sect retained a democratic political ideology. A moderate Khariji branch, the Ibadhis maintained an office of Imam based on this ideology but in reality it was prone to reversion to hereditary succession. Interior Omani tribal interests and coastal commercialism challenged the Imamate as a democratic institution. The author provides a history of the competing coastal Sultanate and a description of the twentieth century developments including the exile of the last Imam elect. Unification of Oman under the Sultanate took place despite opposition in Dhofar and from supporters of the Imam.

History, The Ibadhi Imamate, Politics, Religion, Tribes.

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Scholz, Fred
1977 "Die beduinischen Stamme im ostlichen Inner-Oman und ihr Regional-Mobilitats-Verhalten." Sociologus 27:97-133.

Abstract provided: Little is known about the Bedouins in the Southeast of the Arabian Peninsula. Single older travel descriptions give information about particular aspects of the Bedouin socio-economic existence. The present essay is the first attempt to represent in a synoptical way the ecological and socio-political conditions of nomadism in eastern Central Oman. Among the Bedouins of eastern Central Oman several contrasts to the Bedouins of northern and central Arabia attract our attention: The smallest migratory groups, the closest ties to, or even subordination to the oasis inhabitants, the lack of tents, etc. Animal husbandry is not the only economic foundation. Fishing, work in the oases, the exploitation of date palms, and transport services were generally common. Next to dates, dried fish played the most important role in the nutrition of both the people and their cattle. This economic alignment was in accord with the restricted regional mobility. The petroleum revenues and the political opening of the country in the year 1970 introduced changes among the Bedouins of eastern Central Oman: The undertaking of extrapastoral work, the commercialization of fishing, the utilization of motorized transport vehicles, etc., lead to the reduction of migration and to sedentarization. The question, whether this transformation process carries a tendency for the marginalization of the Bedouins or for their integration into Oman society and, above all, into the Oman economy, is as yet not to be answered. Up to now, it seems only possible to point out some development tendencies which can be understood in the frame of previous situational changes.

Ecology, Fishing, Pastoralism, Rural Economy, Social Change.

Shannon, Michael Owen
1978 Oman and Southeastern Arabia: A Bibliographic Survey. Boston. G. K. Hall & Co.

This bibliography is a valuable contribution to the current body of reference works available on Oman. It contains references to both primary and secondary sources written in English and the other major European languages. The entries cover a wide range of topics pertaining to Oman and many of them are annotated. The compiler arranged the entries in alphabetical order by author but unfortunately they are not cross-referenced, although a subject-author-title index is provided. The introductory chapter serves as an excellent guide to the most pertinent literature and reference works on Oman. This volume is highly recommended to researchers and general readers.

Reference.

Shepherd, Gill
1978 "The Omani xanith." Man 13(4):663-665.

Response to Wikan (1978). Shepherd criticizes Wikan for failing to consider comparative data from other Muslim societies. She feels that the dismissal of this data from consideration has led Wikan to over-emphasize "gender as a problem."

Sex Roles.

1978a "Transsexualism in Oman." Man 13(1):133-134

Response to Wikan (1977). Shepherd compares the data which Wikan presented with data from Mombassa. She argues that the Omani xanith does not constitute a third gender but fills a role created by a lack of economic opportunity. She suggests that society is a hierarchical continuum which stretches between the powerless, poor and dependent and the powerful, wealthy and independent.

Speece, Mark (compiler)
1981 Draft Environmental Profile of the Sultanate of Oman. Tucson, Arizona. Arid Lands Information Center for U. S. Man and the Biosphere Secretariat, Department of State, Washington, D.C. (National Park Service Contract No. CX-0001-0-0003).

This doucment reviews the information available in the United States for an evaluation of the environment and natural resources of Oman. The report includes a vast scope of environmental data and outlines the principal environmental problems of the country in the three categories of water supply, agricultural resources and rural health. Within these areas the authors emphasize several specific problems: (1) natural water shortages and period drought are primary obstacles to effective irrigation systems and agricultural productivity; (2) widespread use of mechanical pumps along the coast has surpassed the rate of natural aquifer recharge and severe soil salinization problems have resulted; (3) public health and sanitation programs are needed to combat disease rates, particularly in the rural areas; (4) there are indications that oil spills, in the Strait of Hormuz, pipelines or storage facilities could cause serious environmental damage; (5) the lack of infrastructure, in the form of trained personnel, institutions and data, constitutes the major barrier to coping with environmental problems. The government has expressed interest in developing the necessary expertise through which to protect Oman's natural resources and has initiated a program of wildlife conservation.

The value of this current work cannot be underestimated for research in all areas of environmental science. A review of the chapter headings illustrates the comprehensive quality of the report:

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Geography and Climate; Demographic Characteristics; Economic Characteristics; Environmental Resources; Geology and Mineral Resources; Water Resources; Soils and Agricultural Land Use; Vegetation; Fauna; Conservation and Protected Areas; Major Environmental Problems; Water Problems; Soils and Vegetation; Agricultural Production; Labor Migration; Public Health Problems; Wildlife; Environment and the Modern Sector; and Economic Development. An extensive bibliography and appendices conclude the volume.

Agriculture, Development, Ecology, Economy, Labor Migration, Population, Rural Economy.

Speece, Mark
1981a Sultan and Imam: An Analysis of Economic Dualism in Oman. Unpublished M.A. thesis. University of Arizona.

Abstract provided: In 1900 Oman was divided into two distinct political entities, reflecting two very different forms of socio-economic organization. Spatial patterns of settlement and markets in the coastal Sultanate reflect the foreign-trade orientation of the economy. Patterns in the interior Imamate were distinguished by a number of mini systems, rather than a single coherent system as on the coast. Long-distance trade models can explain coastal patterns but models emphasizing local ecological and socio-economic factors must be used to examine the interior.

The internal structure of the two systems is as different as their spatial organization. The urban dominance of "rent capitalism" characterized coastal Oman. Ownership of rural land and water by urban landlords is common, but is unusual in the interior, where land and water rights of invidiual villages are quite evenly distributed among inhabitants of the village.

The roots of this dichotomy go back to before the rise of Islam. The Persians introduced the basic elements of the coastal organization, while Arab tribes brought alternate socio-economic forms to the interior. The rise of Islam soon helped crystalize the differences. Oman's particular form of Islam provided the ideology to allow the interior to resist the economically more vigorous coast until well into the twentieth century.

Development, Economy, History, Maritime Commerce, Marketing, Rural Economy.

Speece, Mark and Elaine Cook
1981 Review of Runoff Agriculture and Water Harvesting in Arid Regions: Techniques Suitable to Oman. Arid Lands Information Center. Office of Arid Lands Studies. University of Arizona, Tucson.

This document consists of a literature review of materials dealing with arid lands runoff agriculture and water harvesting and some concluding recommendations pertinent to Omani agriculture. Traditional systems considered in the discussion include: multi-functional terracing systems; water diversion systems; and qanat systems. Recent developments in water technology research are presented: catchment shaping; surface treatment; and storage of harvested water. Various systems within these technology areas are diagrammed in the text.

Traditional agricultural practices in Oman are described in the framework of Scholz' (1980) classification of land according to seven environmental zones. The impact of unplanned modern technology upon agriculture in these zones, combined with labor shortages and new attitudes towards investment have led to a breakdown of community-cooperative agriculture. Recommendations for the future utilization of runoff agriculture and water harvesting techniques are presented at the end of the paper. In the evaluation of appropriate techniques for specific cultivation areas in Oman several factors are considered, among them: environmental suitability and land tenure practices. On the basis of their evaluations, the writers suggest that microcatchment systems hold the most potential for Oman. Additional systems are potentially suited to a number of the zones within Scholz' scheme. The authors do not over-simplify the environmental complexity of Oman by suggesting the widespread application of a single agricultural improvement system. Rather, they emphasize the need for regionally appropriate, low mechanization technology systems.

Agriculture, Development, Ecology.

Stevens, J. H. and E. Cresswell
1972 "The future of date cultivation in the Arabian peninsula." Asian Affairs 59(2):191-197.

Date cultivation has been the chief agricultural pursuit in the oases of Arabia. This article reviews agricultural techniques, date processing and local terminology. In Saudi Arabia the demand for dates is declining due to the rapid growth of towns and a decline in the rural population. Dietary patterns are changing and settled nomads do not practice date horticulture. The profit margin on dates is dropping due to rising labor costs and falling market prices. The demand for fruits and vegetables is increasing and, therefore, cultivators find them more profitable. Some

factual information about Omani date varieties is included but the documentation of this trend is based mostly upon data from Saudi Arabia oases.

Agriculture, Rural Economy, Rural Sector, Social Change.

Sultanate of Oman
1974 Statistical Year Book. Muscat. Development Council, Technical Secretariat, National Statistical Department.

This volume was prepared by the National Statistical Department as a major compilation of the available statistical information pertaining to a wide range of sectors on the national level through the end of 1974. It provided a base for planning and monitoring economic and social development programs in the mid 1970s. There is little text, but ample charts and tables are provided in these chapters: Weather Statistics; Education; Health; Social Affairs and Employment; Posts and Telecommunications; Electric Power and Water Supply; Civil Aviation and Shipping; Roads and Road Transport; Housing and Other Public Works; Prices and Family Expenditure; Agriculture and Livestock; Petroleum; Trade; and Finance.

Development, Reference.

1975 Pre-feasibility Study for the Musandam Province. Report: Supplement Study. Musandam Region. National Development Council.

This is an exhaustive body of technical data collected during an Australian study of the Musandam Peninsula. The study includes chapters on: Demography, Economy and Employment; Agriculture; Fisheries; Health; Education; Housing; Public Works; Social Welfare; Water Supply; Energy; Transport; and Communications. Based upon this material the authors developed detailed recommendations concerning development for the Musandam Peninsula in each of these sectors.

Agriculture, Development, Economy, Education, Fishing, Health, The Musandam, Population, Rural Sector.

Sweet, Louise
1971 "The Arabian Peninsula." Ch. 4 in Louise Sweet, ed. The Central Middle East: a Handbook of Anthropology and Published Research on the Nile Valley, the Arab Levant, Southern Mesopotamia, the Arabian Peninsula and Israel. New Haven. Human Relations Area Files Press. 199-265.

This chapter contains an anthropological description of the Arabian Peninsula from an ecological perspective. Sweet correlates subsistence economy with habitat and outlines four basic environments and patterns of resource extraction associated with them: (1) uninhabitable land used in transit only; (2) pastoral-hunting in marginal environments; (3) fishing along the coast, and (4) cultivation in localized areas based on rainfall water management or oasis water supplies. The author provides a detailed discussion of Muscat-Oman, tribal groups, stratification of social structure, etc. but her analysis is based on out-dated sources. The limitations of her survey point out the vast gaps in the ethnographic literature of Oman. Annotated bibliography.

Ecology, Rural Economy, Tribes.

Thesiger, Wilfred
1950 "Desert borderlands of Oman." Geographical Journal 66(4-6): 137-171.

In 1948 Thesiger travelled in the hinterland of Trucial Oman and attempted to visit inner Oman. The Duru tribesmen and the Imam, hostile to Christians, refused to let him enter their territories. Skirting the Rub al Khali (the Empty Quarter) he succeeded in visiting a portion of the landscape which he wished to investigate. Later, in 1950, he successfully travelled in the interior of Oman without arousing suspicion. His accounts contain scattered but useful notes regarding tribal relations, topography, and ethnographic details.

The Ibadhi Imamate, Rural Sector, Tribes.

Townsend, John
1977 Oman: The Making of a Modern State. New York. St. Martin's Press.

One of the first foreign advisors of the Omani goverment, Townsend is in an excellent position to describe the transformation of Oman from a conservative, underdeveloped state under Sultan Sa'id bin Taimur, to a modern state under Sultan Qaboos. Townsend served briefly as an economic advisor to Sultan Sa'id, and later to Sultan Qaboos, first in 1971, and again in 1972-1975. During the 1972-1975 period he was an official of the Omani government and carried the title of "Chief Economic Advisor."

The book is divided into three parts: "The Environment," "Sultan Qaboos and the New Order," and "The Challenge of the Future." Four maps and some documents are appendixed. The first part contains some factual information on Oman including its history through the 1930s and a sketch of Sultan Sa'id bin Taimur's reign from 1932 to 1970. Part two deals with the political history of Oman after the 1970 coup including the emergence of the Popular Front for the Liberation of Oman and the War in Dhofar. Part three presents a rather pessimistic view of the future of Oman. Townsend concerns himself with what he considers the two major contraints threatening the development of Oman: the depletion of Oman's oil resources by the end of the century, and water shortages.

Development, Economy, History, Modern History, Politics.

Twisleton-Wykeham-Fiennes, Ranulph
1970 "Sweet water for the hottest land." Geographical Magazine 40(12):888-893.

This is a short general description of the aflaj written in journalistic style. The article reviews their history, distribution, construction methods, maintenance and local management. The author notes that the longest falaj in Oman is in Dhofar province. Although dated and misinformed, the work provides a good introductory overview of traditional Omani water management.

Irrigation.

United Nations, Economic Commission for Western Asia
1981 The Population Situation in the ECWA Region: Oman. Beirut.

This bulletin reports the findings of the Economic Commission for Western Asia (ECWA) in its study of Oman's current population. It reviews the available sources of population estimates and offers a figure of 766,000 Omanis (in 1975) and 100,000 non-Omanis. General population distribution and structure charts suggest that half of the population resides along the coast and the median household size is 5.8 persons (exclusive of non-Omanis). Fertility and mortality rates are presented on the basis of data from two unpublished socio-demographic surveys of selected Omani towns.

ECWA estimates half the population to be resident in urban centers. No data on internal migration exists but it appears that rural to urban movement is increasing. Approximately one-fourth of the Omani work force is abroad at present (38,000 persons) but the rate of out-migration may have slowed in recent years. The rate of growth in 1975 was 3 percent per annum and it is likely that this figure will rise. Developments in education and economic activity since 1970 are discussed.

Oman lacks an explicit, comprehensive population policy. The government's priorities are the reduction of the present rates of morbidity and mortality. Other concerns include: (1) the migration of educated and skilled Omanis, needed for Oman's development programs; and (2) increasing dependence upon foreign labor. These problems have led to an increase in the number of planned vocational institutions and the development of repatriation programs. Current population distribution is satisfactory but the government wishes to prevent mass immigration and rural to urban migration. To achieve this the government plans to affect a wider geographic distribution of investment and bolster the least developed regions.

No explicit family program exists but a program for improvement of maternal and child services is in operation. A comprehensive welfare program allocated monetary aid to some 5,000 families.

Economy, Education, Labor Migration, Population.

Wace, Barbara
1962 "Muscat and Oman." Geographical Magazine 35(2)109-122.

This work is a brief journalistic account of the author's personal visit to Oman. There are a few references to the development policies of Sultan Sa'id bin Taimur, medical facilities and the Omani acceptance of western medicine.

Introductory.

1969 "Master plan for Muscat and Oman." Geographical Magazine 41:892-905.

This article surveys the development plans of the previous Sultan, Sa'id bin Taimur, toward the end of his reign. When oil revenues became available in the late 1960s he approved a cautious initiation of development projects. Among them: harbor and urban development of Muscat and Matrah, administrative restructuring of the government, 8 hospitals and small medical facilities, roads, schools and currency reform. Already in operation at the time of the author's visit to Oman were experimental farms which tested the adaptive potential of new crops. Some foreign banks and private businesses received permission from the Sultan to establish offices in Oman.

Development.

Wikan, Unni

1977 "Man becomes woman: transsexualism in Oman as a key to gender roles." Man 12(2):304-319.

Abstract provided: A description and role analysis of an institutionalized transsexual role (Arabic: xanith) in coastal Oman, and the reciprocal male and female gender roles, are provided. Transsexuals practice as homosexual prostitutes. They retain male names, but are socially classified as women with respect to the strict rules of segregation. A number of idioms express their intermediate gender position. They also throw light on the conceptualizations of man and woman: they differ from men in their sexually passive role, and are transformed into men if they prove their potency by deflowering a virgin bride. They differ from women in being prostitutes, whereas women are conceptualized as pure. Their relations to men indicate an ideology of male sexuality clearly contrastive to the Mediterranean Don Juan complex and reveal important prerequisites for the contrastive but mutually supportive man-woman relationship in Oman.

Finally, individual and public reactions to transsexuals highlight Omani conceptualizations of the person, and retraint in sanctioning and interfering in the relations and activities of others.

Sex Roles, Social Values, Women.

1978 "The Omani xanith." Man 13(4):667-671.

Wikan's response to Shepherd (1978) and Brain (1978). Wikan reasserts her claim that the xanith constitutes a third gender role on the basis of the "deeply entrenched institutionalisation" of their behavior.

Sex Roles.

1978a "The Omani xanith." Man 13(4):667-671.

Response to Shepherd (1978) and Feuerstein (1978). Wikan raises more points in support of her thesis regarding the xanith.

Sex Roles.

1982 Behind the Veil in Arabia: Women in Oman. Baltimore. Johns Hopkins Press.

Unni Wikan is a Norweigen anthropologist who lived in the coastal town of Sohar on two different occasions, totaling eight months of residence. During her stay in Sohar (1974 and 1975-6) she conducted an ethnographic study of the role of women in the culture and

society of the community. Her first publication of this research was an article on the role of transsexuals in Sohari society (Wikan 1977). In contrast, this book presents a much more comprehensive account of the world of women and the spheres of male-female interaction. The author states that the volume is intended to provide a contribution to both the study of gender roles and the study of Middle Eastern culture.

She has succeeded in presenting her research in a manner which is sufficiently informal and personalized to interest the general reader and sufficiently interpretive to attract the anthropologist. The orientation of the personalization is of particular interest to the anthropologist, rather than a drawback, for she challenges her own anthropological preconceptions. In this process she presents the reader with the evolution of her own interpretations of Omani social values. This methodological exercise enables the reader to judge the criteria and validity of her conclusions.

Wikan's holistic approach to the study of Sohari women led her to investigate a number of aspects of their lives in depth. She begins by recounting her story of establishing a household in Sohar (with her husband who is also an anthropologist; see Barth forthcoming), attendance at social functions and a description of of the setting of the community. Addressing the role of women, she presents a detailed discussion of male and female gender roles. In treating these two highly segregated worlds, Wikan is careful to distinguish between the ideal social model of sexual segregation and the actual behavior of men and women. The role of child rearing and socialization is also considered as a vital mechanism in maintaining the traditional bi-partite values and division of labor.

A personal fascination with the significance of the burqa or women's facila mask led the author to devote a chapter to her observations concerning its use and significance. Herself a participating member of the women's world, Wikan examines aspects of daily life among women. Although she tends to generalize, there is a clear effort to describe the personality of Omani women, their patterns of communication (the roles of gossip, speech and silence) and their attitudes towards themselves. The section of the book dealing with honor makes a number of excellent points. Honor has been treated in the literature on Middle Eastern society as a characteristic of men. Wikin explores in depth the significance of honor among women and how it differs from the male concept. As with most topics covered in the book, she stresses here too the differences between ideal concepts of honor and real behavior.

Following these chapters on women, she briefly discourses on the role of transsexuals, then focuses upon the contexts and nature of male-female interaction. Marriage is discussed from the perspectives of both process and meaning. Male and female roles of interaction through competing marital and family ties are evaluated. This topic is covered in a number of chapters which are based mostly upon case study material. At this point Wikan has to rely upon verbal accounts more than in her earlier chapters as her direct observation of marital relations is limited by social conventions.

One of the most outstanding qualities of this book is Wikan's holistic approach. Her study of women and their realm did not lead her to undervalue the need to perceive the male world as well. The total social context of female actions and conceptions plays an important part in her analysis. The book is not a theoretical work but achieves its explicit purpose: to describe and analyze Sohari women. The major limitation of the work is its heavy reliance upon a half a dozen case studies. How "typical" these cases are, or how much can be generalized from them is problematic. Wikan recognized this however and provides the reader with her own evaluation of her data base.

Throughout the volume, and particularly at the end, the author is critical of her own role as an anthropologist. She carefully points out that gossip among Sohari women is infrequent and socially unacceptable. Yet to understand their lives Wikan felt she had to resort to instigating gossip. She examines her own assumptions, expectations and emotions throroughly. In a self evaluation she concludes the book by challenging her own notions of social reality especially her interpretation of non-verbal communication. She rejects her initial view that data must be elicited largely through speech. Having eventually learned to grasp the role of silence among Sohari women, she suggests guidelines for further study of communication patterns among women.

Occupational Specialization, Settlement Patterns, Sex Roles, Social Change, Social Stratification, Social Values, Women.

Wilkinson, John C.
1970 "The origins of the Omani state." in Derek Hopwood ed. The Arabian Peninsula: Society and Politics. London. George Allen and Unwin. Ltd. 67-88.

An article about the origin of the Omani State and its development, from the pre-Islamic period until the present. Wilkinson believes that Oman has been influenced by both its descent and its maritime commercial tradition. A lengthy discussion of Ibadhism and its role on Oman's socio-economic and political profile is presented. The author deals with the Imamate/Sultanate conflict and concludes that the "Ibadi politico-religious ideology is an impractical basis for the permanent development of the state."

History, The Ibadhi Imamate, Politics, Religion.

Wilkinson, John C.

1971 "The Oman question: the background to the political geography of south-east Arabia." Geographical Journal 137(3):361-371.

Abstract provided: A discussion of the political geography of south-east Arabia revolves around the question of what constitutes Oman. Assuming that some sort of regional entity centered on the mountain range of south-east Arabia exists, political problems may be divided into those affecting internal unity and those concerning Oman's relationships with outside powers. The structure of internal unity is complex and demands analysis of the traditional economic and social organization of the peoples of the area and research into the long historical record of the Imamate. The traditional order has been subjected to entirely new strains by the switch of interest on the part of outside powers from Oman's strategic maritime setting to the oil potential of the desert interior. This has reversed the importance of the settled mountain core and its extensive desert frontier areas and has necessitated the precise allocation of territory to the region's component political units. In this paper the frontier dispute with Saudi Arabia is examined in geographical perspective and Britain's role in creating new state structures within the region is discussed. Some of the major unresolved problems posed by Britain's decision to withdraw from her treaty obligations are outlined.

The Ibadhi Imamate, Modern History, Politics, Tribes.

1974 "Bayasirah and Bayadir" Arabian Studies 1:75-85.

Wilkinson provides a historical-linguistic discussion of the origins of the terms bayasirah and bayadir and an analysis of the roles of these peoples in contemporary Oman. The bayasirah are identified as a non-assimilated group of client clans attached to Arab tribes. Although not slaves, this servant class has no known origin and hence low social status; it is probable that they predate both Persian and Arab peoples in Oman. The bayadir are a mixture of assimilated Persianized peoples who specialize in agricultural work. They are usually hired by Arab landlords for specific tasks. In Ibadhi Interior Oman they have the full rights and obligations of Arab tribesmen. Ibadhi principles mitigate tendencies for social stratification in the tribal villages, with the exception of the case of the bayasirah.

Agriculture, History, Occupational Specialization, Rural Economy, Social Stratification, Village Social Structure.

Wilkinson, John C.

1974a The Organisation of the Falaj Irrigation System in Oman. Research Papers No. 10. School of Geography. University of Oxford.

This paper deals with the basic structural, organizational principles underlying the operation of irrigation systems in Omani oases from a historical perspective. The author describes the fundamentals of water technology and the history of irrigation in Oman. The falaj system is the focus of the article and is described in relation to village social structure. Water sharing and systems of rotation according to time cycles are discussed in detail. The falaj layout maximizes equity in water distribution to conform with traditional tribal and religious egalitarian ideals.

Material on the occupational structure, system maintenance, and personnel involved in operating the falaj is provided. Wilkinson describes categories of agricultural occupations and seasonal fluctuations in the labor force. Concluding references mention recent changes in the system as they affect the social, religious and economic sectors. He suggests that the structure of village water management is undergoing radical changes and the labor shortage is the most crucial catalyst of this process.

Agriculture, Irrigation, Occupational Specialization, Rural Economy, Rural Sector, Village Social Structure.

1977 Water and Tribal Settlement in South-East Arabia: A Study of the Aflaj of Oman. Oxford. Oxford University Press.

Wilkinson's book provides a substantial basis for any study of irrigation communities in Oman. His detailed analysis is not confined to irrigation and water management systems, but covers a wide range of topics and demonstrates his competence not only as a geographer but as a linguist, historian and writer as well. His background of extensive personal familiarity with Oman and oasis settlement help to give this work extraordinary depth and insight.

The book discusses in unusual detail the regional geography and hydrology of Oman with emphasis on the distribution of water resources and its relationship to settlement patterns. The extensive discussion of water management and falaj irrigation provides technical detail and the basis with which to perceive the relationship between social structure and resource distribution. It is this relationship which Wilkinson develops into his broader analysis of the relationship between political and social organization and dependence upon the falaj engineering mechanism. Without the falaj,

settlements in Oman could not have existed in the pre-modern era. He points out the problems which have historically arisen between the needs of a capital intensive irrigation system which requires routine cooperative maintenance and the nature of tribal and religious (Ibadhite) ideologies. Despite conflicting priorities, Omanis have largely maintained social and ecological equilibrium throughout their history. In addition to his theoretical contributions, the author also provides a large amount of data on sedentarization, tribal history, segmentary lineage models, the Imamate, and village social organization. The contribution of this work to Oman studies cannot be underestimated.

History, The Ibadhi Imamate, Irrigation, Occupational Specialization, Sedentarization, Social Change, Social Stratification, Tribes, Village Social Structure.

Wilkinson, John C.
1978 "Islamic water law with special reference to oasis settlement." Journal of Arid Environments 1:87-96.

Basic water laws in Islam's shari'a law are few but cover a wide range of hydrological situations. Surface and sub-surface flows are both recognized as are degrees of salinity and pollution. The law perceives water as scarce and therefore the property of the community, not to be speculated with. The laws are attentive to the needs of agricultural and pastoral peoples and prescribes a system of allocation according to use. But complementary to these formal laws are local codes which adapt practices of water distribution to local circumstances.

When the Arabs settled the irrigated communities of Oman they were faced with the reconciliation of the existing system of water and land tenure with both the needs of a tribal people and the ideals of Ibadhism. It appears that to meet the demands of the situation, the two principles of fair play and mutual agreement were established for the regulation of water, a process upon which settlement stability has been dependent. The need for local adaptation of water distribution was filled through the flexibility of the law itself. The diversity of water management practices under Islamic jurisdiction has been tremendous. Through its premise of fair dealing, Islamic water has been able to regulate all of the existing, as well as new techniques, of water management.

The early legal systems in actual use were seldom codified or stipulated in writing but their operation becomes apparent in legal judgments handed down in cases involving water rights. This extends the scope of Islamic water law beyond the confines of the formal texts to encompass highly regionalized systems, such as that of Oman.

Abstract provided: This paper attempts to examine the spirit in which Islamic water law developed rather than details of its legislation. The basic principles are first outlined, but the main emphasis has been placed on the way these prescriptions have been married up with techniques of water exploitation and systems of water distribution which must have been more or less unknown to the Prophet and his companions. The consequent flexibility of the Islamic water code and the sound hydrological knowledge on which it is based account for its acceptance by many societies as a code by which they voluntarily regulate their water affairs and why it can still form a suitable point de depart for modern water legislation.

History, Irrigation, Law, Religion.

Wilkinson, John C.
1978a Problems of Oasis Development. Research Paper 20. Oxford School of Geography. University of Oxford, Oxford Publishing Co.

Wilkinson presents a broad overview of oasis life from the Sahara to Arabia in which he points out the fundamentals of oasis settlement common to this entire region. His historical perspective on the relationship of such key factors as exchange and migration to oasis settlement lead to his conclusion that the oasis is not isolated but an integral "node" in a network of exchange. Both migration and mobility have historically characterized these settlements and they have promoted an ongoing process of adaptation. In this process, merchant traders and bedouin transporters continuously incorporate new products into the exchange system. He also emphasizes the role of adaptation in the development of the primary variables of human desert life: the date palm, the camel, and irrigation systems.

The recommendations which he presents are largely cautionary. With stress on the unique character of each oasis, he strongly rejects blanket solutions. He suggests working through local institutions as the only way for successful central government participation in development. He argues for control of mechanization, understanding for the role of nomadic populations and recognition of the strong urban bias among government developers and planners.

This work places the oasis community within a regional economic network encompassing both the desert and the urban centers.

Development, Ecology, Rural Sector.

Wilkinson, John C.
1980 "Changes in the structure of village life in Oman." In T. Niblock ed. Social and Economic Development in the Arab Gulf. London. Croom Helm. 122-134.

In this article Wilkinson discusses the dependence of village social organization upon the functioning of the falaj irrigation system. The linking of environment and society through the distribution of water shares has been tne basis of Omani village society. Communal agricultural systems have declined with the loss of traditional local political control through the transfer of power to the coast and the importation of modern technology. Labor migration has reduced the amount of manpower available for maintenance of the systems and the wealthy have invested in private ownership of mechanical water pumps. A growing class division between rich and poor is apparent and traditional social services endowed through waqf have suffered from the decline of agriculture. Wilkinson concludes with remakrs on the present lack of insight with which the central government has dealt with the situation of the spiraling costs of future revitalization of falaj irrigation should the current pattern of neglect continue.

Development, Irrigation, Rural Economy, Rural Sector, Social Change, Village Social Organization.

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