

PRELIMINARY INVESTIGATIONS OF THE POLISH MISSION IN THE FARAFRA OASIS

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GEOGRAPHICAL BACKGROUND

INTRODUCTION

The reconnaissance aimed at studying the local community in the Farafra oasis in western Egypt was carried out by the multidisciplinary team during the week's stay in the oasis from 4 to 10 February, 1993. The team consisted of: Janusz Gudowski, agricultural economist and irrigation and land amelioration specialist; Celina Kuzak, mechanical engineer; Florian Plit, geographer; Elżbieta Puchnarewicz, politologist; Dorota Raubo, geographer; Maksymilian Skotnicki, geographer, Paweł Tworek, sociologist; Władysław Zakowski, Egyptologist and Urszula Zuławska, economist.

The field research was sponsored and organized by the Institute of Developing Countries, Faculty of Geography and Regional Studies of Warsaw University. Its objective was twofold: firstly, to gain concrete scientific information; secondly, to train the team members to collect it in an unusual and difficult environment.

Qasr el-Farafra is a particular place: a small town situated almost in the centre of an extensive depression, some 280 km from the Nile Valley in a straight line. It can be reached from Cairo by the road via Bahariya (414 km) of which a large part is in poor condition and difficult to pass. Another way is from Asyut in the Nile Valley via Kharga and Dakhla (695 km). A considerable distance separates it also from the neighbouring oases (180 km from Bahariya and 280 km from Dakhla).

The oasis for many years formed part of the territory under the military administration which due to restrictions applied in such zones, regarding free travel and communication, contributed to its natural isolation. The result was that the pertaining sociological and geographical realities were little known to the outside world. Unlike the other oases of the Sahara,

particularly those under French domination, where many scientific institutions and expeditions were at work, Farafra only rarely was visited by scholars and travellers.

Beginning from about the early eighties of this century the situation commenced to change. Due to the administrative reform and the ongoing improvement of routes and means of transport, the oasis gradually opened to the exterior world. The inhabitants of Farafra, who up to that time lived in relative isolation and were rather ignorant of modern technology, were getting in more frequent contacts with it and with its application. All the more so as at Qasr el-Farafra and its neighbourhood the work was undertaken in connection with the New Valley development project. In the neighbouring oases, the irrigation and road network expansion programme were carried on much earlier and on a larger scale. Farafra has also become the object of tourist excursions, which is invariably bringing it into contact with alien behavioural patterns and cultural values.

At present, Farafra and its inhabitants constitute an excellent, almost model, object to study economic and social change occurring under the influence of modernization processes. The precondition of such theoretical studies and conclusions is, however, a survey of the present existing state of the village of Qasr el-Farafra: human interrelations within the community, means and methods of soil utilization, basic resources management, etc. The partial answer to these questions was given by the survey conducted in February 1993.

In this issue of *Miscellanea Geographica* we present only preliminary sample results of the field research and observations, therefore they should not be considered as a complete and final entity. Part of the material collected is still being examined, field notes compared and literature consulted. Hopefully, this will result in a more thorough publication in the future.

NATURAL ENVIRONMENT

West of the Nile Valley, roughly from the heights of Abu Simbel, almost uninterruptedly to the Mediterranean coast stretches the belt of wide depressions, tectonically conditioned and remodelled by aeolian activity.

Farafra, which is centrally situated, extends from 26°N to 28°N and from 27°E to 29°E. The borders of the depression are fairly well marked by the isohipsis of 200 m above sea level. It is surrounded by the moderately high plateaux. The most pronounced is Guss Abu Said bordering it on the western side and reaching the height of 300 m above sea level. On the southern side the highest of the isolated elevations reaches 353 m a.s.l. To the north they are lower. The bottom of the depression is not quite flat, but it forms a series of shallow, unpronounced basins. The lowest point drops to the height of only some 25-30 metres.

The distinct diversities of the landscape form numerous residual hills with steep slopes and flat summit surfaces. The highest of them towering over the northern part of the depression reaches 242 m above sea level. The others, more important, are Gebel Gunna (South), 230 m, and Gebel Gunna (North), 220 m a.s.l.

The Farafra depression is situated in the area of the Egyptian monoclinial fold. The crystalline substratum rests at a considerable depth: the Paleozoic formations are undeveloped, but Cretaceous and Tertiary strata descend very deep. In the vicinity of Farafra, Cretaceous formations are preponderant. They gave it the popular name of the "White Oasis" as well as the "White Desert". The latter is usually given to the part of the depression to the north of Qasr el-Farafra, with interspersed, numerous picturesque Cretaceous monadnocks. They are considered to be one of indisputable, probably even the greatest, tourist attractions of landscape in this area.

In the neighbourhood of Qasr El-Farafra, the water-bearing Maastricht formations shaped as chalk deposits fairly often emerge to the surface. Only locally they are covered by the medium paleogenic rocks which in some places took the shape of low sandstone residuals. With well-marked relief made by erosion, they are in certain localities masked by contemporary drifting sands. With the said Maastricht beds over 250 m thick, numerous springs (*uyun*, sing. *ain*) are connected. These are usually the fissure springs with very unequal discharge volume averaging from below 1 l per second (Ain Bishoa, ca 25 cubic metres daily in 1962) to ca 10 l per second (Ain el-Balad — 850 cubic metres daily in 1933 and 480 cubic metres per day in January 1962; al-Ramly 1964). Measurements taken in February gave a very similar volume (over 500 cubic metres per day). The water flow, as well as the number of springs vary in the particular years. In the early 1960s they numbered about 70. Recently, as a result of the drilling of deep artesian wells, some of them have silted up or have been buried by sand. Waters of the *ayun* are usually slightly mineralized (particularly by cations Mg and Na, anions Cl and CO₃) and their temperature is close to the average figures for the air temperature or slightly higher (measurements in November 1961 gave minima and maxima between 19° and 29.5° C). Thermal values in these spring waters slightly oscillate depending on the season.

In addition to the springs of the type *ain* there occur in the Farafra depression artesian wells of hot deep water called *abar* or *biar* (sing. *bir*). They are connected with the Lower Cretaceous formations and are fed in the region of Gebel Uweinat, Ennedi and even in Kordofan. The name *bir* is also used to denote numerous deep (several hundred metres) drillings reaching the store of hot artesian waters. The first and the most important of such *birs* is found at Qasr el-Farafra. It supplies the greater part of water used for irrigation in the oasis.

The climate of the Western Desert, where Farafra is situated, is extremely dry, practically without any rainfall at all. Heavy rains happen

habitually only once in several years. According to the estimates of F.Bliss (1983), the mean yearly precipitation is only 3 mm. From el-Ramly's data (1964) it results that between 1945 and 1960 it was no more than 2 mm and the mean monthly rainfall was usually 0. Only in February it was 0.5 mm, in March 0.2 mm, in April 0.1 mm, and in October it reached 1 mm. Considering the minimal volume of the average monthly precipitation, it becomes evident that it has no practical value. It may happen, for instance, that one heavy rain, as the one which fell at Farafra just before the arrival of the group from Warsaw University in 1993, would bring about the opinion that February was statistically the most rainy month of the decade. *Agroclimatological data. Africa* (FAO 1984) gives no data for Farafra. For Dakhla the mean yearly precipitation level for the years 1931-1960 is given as 0.

Geographical distribution of the rainfall is absolutely meaningless in view of its scarcity for the very rare appearance of ephemeral vegetation. Rainfall is insufficient to allow its growth even in depressions. This is also the reason for very scanty animal life, which is noticeable almost exclusively around places where the groundwater appears on the surface. The vegetation consists either of cultivated or ruderal plants.

Among the wild animals, more frequent are the so-called cosmopolitan species (e.g. rats), in addition to wandering birds. F.Bliss (1983) noted that in 1981 the flocks of passing herons halted at Farafra. The same happened in 1993, with one difference though, that numerous white egrets (*Cosmerodius albus*) were not only in passage at the oasis but mainly stayed for the winter.

F.Bliss (1983) was greatly astonished to notice wood pigeons (*Columba palumbus*) far away from human habitations or even from any water source. At the same time, even scorpions and snakes were met only near settlements. Wood pigeons, far in the desert, were observed by the members of the Reconnoitring Mission of Warsaw University, too.

In contrast to the lack of precipitation rhythm, there is a well-established yearly thermal rhythm at Farafra. Winters are warm (mean maxima in January 21.0° C) but with cool nights (mean January minima 4.0° C). Summers, on the other hand, are hot. The hottest month is August, when the mean minimal air temperature rises to 21.0° C and mean maxima — even to 38.6° C, while the heat reaching 50° C is not unusual. The heat at Farafra is relatively unoppressive because of the low level of humidity of the air. In August it stays at the level of about 30 per cent and is only slightly higher than in April (26.5%). The highest relative humidity occurs at Farafra in December reaching 56% (el Ramly 1964; cf. Bliss 1983).

Evapotranspiration is on a very high level and amounts to 2,000 mm (at Dakhla — 2,073 mm). The climate of Farafra is also characterized by minimal cloudiness and a very great insolation. In the environs of Dakhla it amounts to 89 per cent (FAO 1984).

POPULATION

Qasr el-Farafra was officially accorded civic rights early in 1993 and its population amounts to about 3,000. The entire depression, i.e. jointly with the old settlement and new villages, is inhabited by ca 5,000 persons. The population number could be fairly accurately estimated thanks to former censuses and estimates. It should, however, be remembered that although the figures seem to be precise, in reality they have only the value of approximation. Also the latest census of 1986 can be accepted with important reservations.

The number of inhabitants in 1874 was given to be 345, in 1897 — 542, in 1950 — 868, in 1960 — 1010, in 1976 — 1515, and in 1986 — 1697. The last figure seems to be greatly underrated because the inhabitants of the new villages are usually largely ignored. The quoted figures take into account solely the dwellers of Quasr el-Farafra and small hamlets in its vicinity situated in the small oases watered by local springs. Normally, 1 to 3 families are living there. Better transport facilities in recent years, in particular the availability of motor vehicles induce many dwellers of these hamlets to live at Qasr el-Farafra and travel only sporadically to their oases in order to carry out necessary works there.

The figures quoted confirm the significant growth of the local population. The reasons are twofold: one is the natural population growth in recent decades, largely accelerated as a result of significant improvement of the health care. The second is considerable settlement of the newcomers (immigrants) tempted by relative abundance of water. In the oasis from the old times there was always plenty of water (its overabundance in relation to the acreage of irrigated arable land is indicated by such specialists as, for instance, el-Ramly, 1964, and F.Bliss, 1983). The new settlers are arriving chiefly from the Nile Valley of the Asyut area, but also from the Delta and from the neighbouring oases.

The growing number of inhabitants noted by censuses and various estimations may also result from ever improving precision and quality of the counting technique and reporting. Especially they give fuller and more reliable information on the number of women and children. Conscious and unconscious lowering the figures concerning these categories of the population is, however, a commonplace in smaller Egyptian communities.