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ANCIENT MONUMENTS OF CYRENAICA AND TRIPOLI*

By PROF. J. L. MYRES, O.B.E., F.B.A.

BETWEEN the western edge of the Nile Delta and the most eastern spurs of the Atlas ranges, before they pass over from Tunis into Sicily, North Africa consists of three distinct geographical regions, with distinct historical experiences. The 'Western Desert' from the Egyptian point of view, or 'Eastern Libya'—to distinguish it from what lies farther west still—is a low-lying slab of Tertiary limestone, marls and sands. It receives less Atlantic moisture, and greater summer heat, and has long been essentially desert; but ancient Egyptians knew it as a reservoir of pastoral tribes and of olive culture, and their general name *Tamahu* meant both 'Berber' and 'olive'. Its oases, Kharga, Siwa, and others, are still centres of population and intercourse, and as it extends westward inland of Cyrenaica, we should include, with those, the oases of Jerabub and Augila. Indeed, there is no natural frontier or change of regime, in the far interior, east of the Red Hamada plateau, of which the sea frontage is Tripolitania. This Eastern Libya has a dangerous and almost harbourless coast: Mersa Matruh is the only landing place, and a very poor one, between Alexandria and Bardia.

West of Sollum, the low interior plateau rises, and also extends to the sea, in the abrupt *Katabathmos* or 'Step-down' through which the only passage is *Halfiya* ('Hell-fire Pass'). It continues to rise, and to present a steep cliff frontage, nearly to Benghazi, and also forms a nearly semi-circular promontory seaward; while southward it subsides into the low desert hinterland. This block of Africa has in fact broken loose, and failed to subside with the regions east and west. But there are two distinct blocks, with escarpments one behind the other and a lower terrace between, all deeply dissected by ravines draining the wide plateau inland. Sometimes, and especially to westward, there is a coast plain seaward of the lower escarpment. As the plateau rises to 2,500 ft., Cyrenaica has enough winter rainfall for pasture in the interior, and retains patches of its old forests on the escarpments; and at the base of the upper escarpment deep springs break out, the most famous of which, sacred to a local deity, Cyra, gave its name to Cyrene, as Apollo's spring to Apollonia

on the coast. Near Benghazi, underground water has caused the plateau to collapse into deep basins lined with rich moist soil, the 'gardens of the Hesperides' which gave Benghazi its earlier Greek name.

Greek settlement began in 631 B.C., at Cyrene, which became very prosperous, with corn, vines, and olives on the terrace and escarpments, sheep on the moors inland, and a monopoly of the *silphium* plant, an umbelliferous household remedy, gracefully advertised on its lovely coins. It attracted friendly natives, and Greek adventurers from all parts, and hived off other colonies along its seaboard, all recognizable, though none so impressive as Cyrene itself. Benghazi (renamed Berenice from an Egyptian patroness) had a notable sanctuary, and has yielded the only Greek statue of real merit. Barca's rich tombs were furnished with Attic vases of good period; Teucheira and Tolmeita (Ptolemais) have walls and Roman mausolea; Tolmeita had also a guild of gladiators, who adopted professional names: 'Hermes formerly Philo'. Apollonia, the port of Cyrene, was wrecked so utterly by earthquake that the site is a wilderness of columns and architraves, with the rock-cut road winding up the ravine, with deep wheel-ruts from its heavy traffic.

Cyrene itself stands above its spring, where two deep ravines isolate and defend its citadel, a bluff spur of the upper plateau, with the sacred spring in its eastern face. Here a natural shelf has been enlarged, and temples of Apollo, Artemis, and other deities have been built, with accommodation for pilgrims; for the sanctuary became famous, and the original shrine was twice rebuilt, with unusual architectural makeshifts. It has recently been cleared, and partly reconstructed. Round the head of the ravine which carries the road grew up the spacious city, with market-place and public buildings, other temples, and a racecourse and cisterns out on the plateau.

What makes Cyrene unique among Greek cities, however, is its amazing cemetery. The tabular limestone was easily excavated into chamber-tombs, with architectural façades and forecourt, in recognized styles, Doric, Ionic, and Egyptian, and many queer experiments. Of these tombs there are many hundreds, besides free-standing shrines like little temples, sculptured sarcophagi, and tower-like family mausolea. Probably, like the Temple of Apollo, these monuments were originally decorated with stucco and bright colour. Unfortunately, all that are exposed have been looted long ago: the only chance of discovery would be where debris from uphill has smothered some of the lower ranges of these chambers.

Fortunately, Cyrene lies a little aside from the main thoroughfare from east to west; and as it has not appeared in the news as a strong-point, it may be hoped that the monuments have not been damaged.

Tripoli, the third geographical region, is itself in three districts: (1) lowland almost waterlogged behind the Great Syrtis—the 'quicksands' of St. Paul's voyage—from El Agheila westward; (2) the Tarhuna moorland, behind Misurata and Homs; (3) another lowland, where the Tarhuna downs draw back from the coast into the higher and steeper frontage of Gharian, before returning coastward in the Matmata ridge and the Mareth position at its seaward end. Of the 'Three Cities' (*Tripolis*) which gave this region its ancient name, the most easterly, Leptis (now Homs), lies among the seaward spurs of Tarhuna; Sabrata (now Zlieten) and Cæa (now Tripoli) are on the frontage

* Summary of an address to the Royal Anthropological Institute delivered on March 23.

of the coast plain, farther west. Tripoli alone has a defensible position and a permanent harbour, for a low ridge of tabular limestone protrudes beyond the long beaches, and bending eastward encloses a considerable port. Leptis in earlier times had been the chief centre, but its harbour was constructed in the mouth of a small stream, and this has silted and destroyed it: the coast also has risen some twenty feet since Roman times, and the quay wall, with lighthouse, boat-steps and bollards, is high-and-dry.

Unlike Cyrenaica, which came into Greek hands without trouble with the Libyan natives, Tripolitania was from the first a cause of quarrel between Greeks and Carthaginians, and the natives supported the latter. For long it was simply 'the depots' (*Emporia*); but after the fall of Carthage in 146 B.C. the Roman protectorate made it accessible, and it became a great source both of grain and of oil. Like Cyrenaica, too, it attracted many Jewish traders. At the end of the third century A.D., Leptis gave Rome one of its most efficient emperors, Septimius Severus, who did not forget his birthplace, and built a palace for his wife, and other impressive buildings. These, overlooking the harbour, became buried in sand dunes when disaster came, so rapidly and completely that after recent excavation they rival Pompeii and Algerian Timgad as an illustration of Roman culture in its later prime.

Neither Tripoli nor Zlieten have monuments to compare with those of Leptis; but the four-faced triumphal arch built for Marcus Aurelius in 164 A.D. in the civic centre of Cea is a fine monument of its kind; and at Zlieten the ground plan of the principal buildings can be traced, and has been partly excavated. The mosaics in private houses, though not so large or splendid as those of Sousse (Hadrumentum) in Tunisia, are among the best in North Africa.

When Tripoli fell to the Arabs, the conquerors were amazed that indemnities and tribute were paid in gold coin; but the citizens explained: "This is what people pay for our oil". How extensive this oil industry became is shown by hundreds of oil farms with stone-built presses, all along the Tarhuna highland. When first visited by travellers, they were described as 'megalithic'—and indeed their stones are very large; but they are based on Roman concrete, on sites with Roman masonry and potsherds, so there is no doubt of their date; the whole process of milling and pressing the olives is depicted on Roman reliefs and frescoes; and the same type of lever press has been seen at work by a modern traveller in Morocco. After the present turmoil, one may hope for re-establishment of this characteristically Mediterranean industry in what seems to have been one of its earliest and most productive homes.

SCIENCE AND THE CITIZEN: THE PUBLIC UNDERSTANDING OF SCIENCE

THE Division for the Social and International Relations of Science of the British Association held a conference at the Royal Institution in London during March 20–21 to consider ways and means for increasing the public understanding and appreciation of science. For more than a hundred years the British Association through its annual conferences has endeavoured to introduce science to the citizen, but the fact remains that to-day, in the midst of a scientific age, science and the citizen are still very insufficiently acquainted. As was so frequently stressed during the course of the conference, we are living in an era in which the discoveries of science are becoming an essential constituent of our everyday life, and an understanding of the spirit and service of science is of the utmost importance for the people and its leaders if our civilization is to survive.

The Exposition of Science

Sir Richard Gregory, president of the Association, in opening the conference, said that since the beginning of history there has always been a lag between stages of scientific knowledge and social and moral wisdom. He considers that what is particularly needed to-day is the promotion of public interest in the close relationships of natural science with other humanistic studies which influence the thoughts and actions of all citizens.

A message from Sir John Anderson, Lord President of the Council, emphasized the vital contributions which science will have to make to the solution of post-war problems. It pointed out that much harm may be done if those without scientific training are encouraged by extravagant advocacy of the marvels of science to expect from science alone remedies for all the social problems which will have to be faced.

A message from Prof. Joffe, vice-president of the Academy of Sciences of the U.S.S.R. (see below), was received but unfortunately not in time to be read to the meeting, and another from Dr. Harlow Shapley and Mr. Watson Davis of Science Service, suggesting immediate international co-operation in the distribution and popularization of scientific information.

Sir Henry Dale, who presided, reminded the audience of some points in the history and associations of the Royal Institution, which was formed with aims closely resembling those to be considered by the conference. He said that the public understanding of science needs for its achievements the co-operation of the two parties concerned—the men of science and the people. The former must study all the means available for interpreting and expounding their problems and achievements, and the whole people must be prepared to receive the message. If Great Britain is to play its part in the civilization now in the making and to keep step in the march of progress with the other great world communities, nothing will suffice short of a recasting of our schemes of education. Science must be given its proper and central place at every stage in elementary, secondary, university and adult education.

Sir Lawrence Bragg dealt with the difficulties of getting the scientific message to the public. Scientific workers are often accused of being too technical in their presentation of their subject. There is some truth in this, but the real trouble is that science has not been regarded as an essential part of a balanced education. We have a number of fine industrial laboratories in Great Britain, but the industrial leaders more often owe their positions to their commercial and financial ability than to their