

having flown into the river streamed back again to the Gulf, thus increasing the natural speed of flow. At the setting in of flood the boats were brought back again to the harbour near the coast in the most simple way, i.e. by taking advantage of the natural influx into the river. Even today at Basra, that is 120 kilometres away from the coast, the Shatt el Arab has an anotropic current of 2 seamiles p.h. as soon as the flood sets in⁽¹⁵⁾

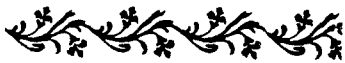
As already mentioned these are the favourable natural conditions for living of the area round the Shatt el Arab. The map (fig. 1) which Guy le Strange plotted on the

region were able to take clever advantage of these natural conditions. On the map one can recognize wide irrigating zones on both sides of the Shatt el Arab thus guaranteeing the supply of South Mesopotamian area, although it had been cut off from the central region.

Because of the aforesaid oecological advantages towns like Basra, zubair, Abadan, and (Muhamara) had been able to flourish at such an early point of time as the times of the Caliphates have been.



15) Handbuch des Arabische Golfs, Deutsches Hydrographisches Institut Hamburg, 1964, P. 351.



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But recently the government in Iraq developed the Shatt al Basra project thus trying to secure agricultural exploitation in additional areas. A canal is to connect the Lake Hammar with the Arabian Gulf⁽³⁾.

The area round the Shatt el Arab, however, could flourish in such a way, in the 1. millenium A.D. is mainly due to the following reasons⁽⁴⁾

1. Irrigation agriculture was possible by quite simple means.
2. There were no problems of salinization.
3. The fishing of fresh water fish as well as sea fish was easily done and plenteous as well.
4. Navigation on the river was uncomplicated.

These four ecological advantages can be explained by the tides and their effects⁽⁵⁾ which provided the inhabitants of the South Mesopotamian area, although cut off from the Mesopotamian central regions, with extremely favourable living conditions. These conditions shall now be illustrated more detailed :

ad 1 : Irrigation agriculture was possible by quite simple means:

The cultivation of Middle Mesopotamia was often only possible by very complicated irrigation systems . In opposition to this the area round the Shatt el Arab could be irrigated by simple canals branching off from the river .

Twice every day the flood filled up the canals with water thus procuring an ideal irrigation without human agency⁽⁶⁾.

Ibn Serapion, too, noticed these effects of the tides on the irrigating canals round Basra and described them as follows :

"Further, the ebb and flow of the tide comes up to the utmost limit of these canals, and flow back therefrom"⁽⁷⁾

ad 2 : There were no problems of salinization :

The history of the ancient Mesopotamian civilizations shows us the problems of salinization. Ancient inscriptions inform us of two great periods of salinization : 2700– 1700 B.C. and 1300– 900 B.C.⁽⁸⁾ .

As a result of this increasing of salinization in Mesopotamia the corn yield of antiquity , necessary for living, had gradually been reduced. Whereas in 2400 B.C. 17 double centners per hectare had still been gathered in Mesopotamia , in 2100 B.C. the yield was only 10 double centners per hectare and finally in 1700 B.C. it was not more than 7 double centners per hectare⁽⁹⁾ . In the millenia before Christ man had still not found out that continual irrigating agriculture needs continual drainage, too ⁽¹⁰⁾ . In the area round the Shatt el Arab however, this problems of salinization did not exist because of the ebb that followed the flood twice a day . Thus the tides brought about a natural drainage⁽¹¹⁾ that prevented the salinization of the soil .

ad 3 : Fishing of fresh water fish as well as sea fish was easily and plenteous as well :

It goes without saying that settlements being situated near the coast are in a privileged position as fishing is concerned . In addition to this South Mesopotamia had the advantage of a low coast because the Euphrates and Tigris, concentrated with sediments as they are, had been pushing a large delta into the Gulf all the time . A low coast being exposed to heavy tides offers quite favourable opportunities for fishing⁽¹²⁾ . Here deep-sea fishery with boats or ships is not necessary at all, since the clever arrangement of nets alone guarantees plenteous fishing . The flood pushes all sorts of fish into the overwashed area of the low coast and as soon as the low tides sets in the fish entangles in the nets⁽¹³⁾

This simple method has already been handed down to us by Arrian and was surely applied in even earlier times⁽¹⁴⁾ . At present, too, this system is still used in many places .

ad 4 : Navigation on the river was uncomplicated :

Harbours situated near the coast could always have been reached easily by taking advantage of the tides, even without the aid of sails and rows .

3) Die Wirtschaft des Irak, Entwicklung und Perspektiven; Republik Irak, Ministerium für Information, Madrid 1978, P. 69.

4) Further details and bibliographical data see : Werner Nützel, Die ökologischen Vorzüge einer kustennahen Besiedlung Mesopotamiens ; in : Mitteilungen der Deutschen Orientgesellschaft, Nr. 112 Berlin 1980.

5) Further details and bibliographical data in : W. Nützel, op. Cit.

6) E. Wirth, op. Cit., P. 148.

7) Guy le Strange, Description of Mesopotamia and Baghdad, written about the year 900 A. D. by IBN SERAPION; in : Journal of the Royal Asiatic Society of Great Britain and Ireland, London

1895, P. 303.

8) Thorkild Jacobsen and Robert Mc. Adams, Salt and Silt in ancient Mesopotamian Agriculture; in : Science CXXVIII, Washington 1958, P. 1251 ff.

9) Th. Jacobsen and R. Mc. Adams, op. Cit., P. 1252.

10) K. Kreeb, Ökologische Grundlagen der Bewässerungskulturen in den Subtropen, unter besonderer Berücksichtigung des Iraks. Stuttgart 1961, P. 97.

11) E. Wirth, op. Cit., P. 148.

12) Guido Petter, Meeresströme und Gezeiten, wurzburg 1979, P.84

13) Further details and bibliographical data in : W. Nützel, op. Cit.

14) A. T. Wilson, The Arabischen Gulf, London 1954, P. 20.

THE CULTIVATED LAND OF THE SHATT AL-ARAB AS DESCRIBD BY IBN SERAPION IN 900 A.D.

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As has been pointed out in the preceeding article the bursting of the dykes of the Euphrates and Tigris in 629 A. D. caused the formation of a great swamp that cut off the area round the Shatt el Arab from the central Mesopotamian region for nearly a thousand years. It is therefore only more striking that in 900 A. D. IBN SERAPION described the region round the Shatt el Arab as a splendid cultivated land ⁽¹⁾ (fig. 1).

But this area round the Shatt el Arab of today came in to existence only 2000–3000 years ago, that is not before the " ancient coast " of the 4. and 3. millenia B. C. having been situated much more to the northwest had shifted

forward to the southeast because of the push of the delta of the Euphrates and Tigris.

That is why Basra and present-day Zubair could not have been founded earlier than in 638 A. D. during the reign of the Caliph Omar in 628 A. D. respectively.

Today only the zones situating near the Shatt el Arab are cultivated by irrigation agriculture ⁽²⁾ (fig. 2), whereas at the times of the Caliphates the irrigation canals had been much more widespread thus securing agricultural exploitation to a much greater extent (fig. 1). In comparing fig. 1 and fig. 2 the decrease of agricultural exploitation becomes abvious.

1) IBN SERAPION : See preceeding article " Middle Mesopotamia at the time of the Caliphates "

2) Eugen Wirth, Agrargeographie des Irak, Hamburg 1962, ill. 11.

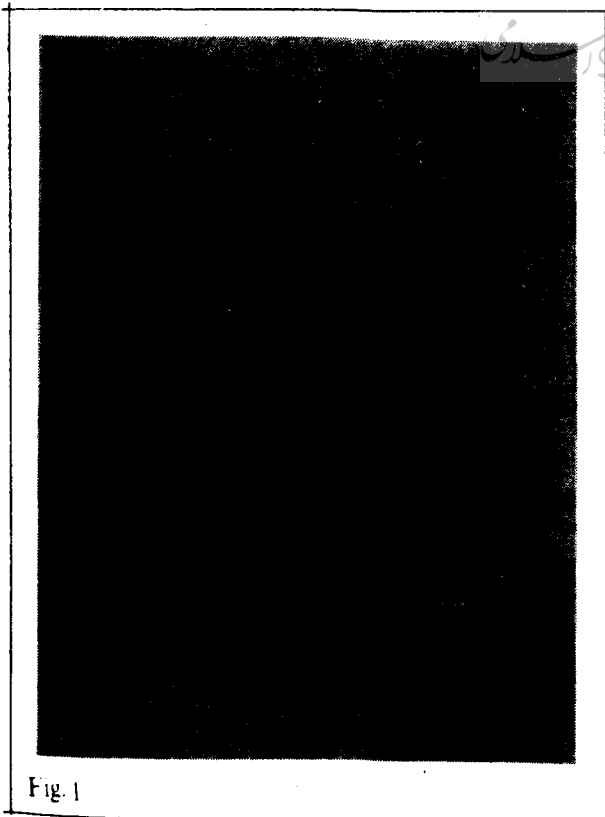


Fig. 1

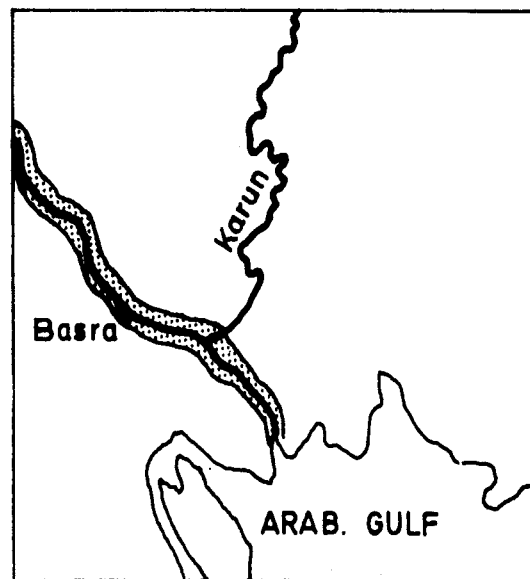


Fig. 2