PHYTOGEOGRAPHY OF IRAQ

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Introduction

The modern state of Iraq, roughly speaking the Mesopotamian territory described in the history, is bounded on the west by the Syrian Desert, on the south by the Saudi Arabian Desert, on the south-east by the Persian Gulf, on the east and north-east by the mountain chains of Persia and on the north by the mountains of Turkey. Roughly the territory lies between latitudes 29° 27′ N and 37° 23′ N and longitudes between 38° 42′ E and 48° 23′ E and is situated more or less in a depression. In length it approximates 960 km. and has a width of about 720 km. and covers an area of 444,442 sq. km.

Two great rivers, the Tigris and the Euphrates, flow along it from the north and north-west directions towards the south. They meet at Qurna, about 64 km. north of Basra; the confluent then flows down to the Persian Gulf as Shatt-al-Arab.

Climate

The climate of Iraq fluctuates between two extremes of a pole so far as temperature is concerned. It is extremely hot in summer and very cold in winter. The rainfall is low. An average record of temperature and rainfall is given below :—

Lower Iraq.—Maximum temp., 51°C.; minimum temp. 6°C.; average rainfall, 150 mm.

Northern Mountains.—Maximum temp., 41°C.; mini- mum temp., 17°C.; rainfall, 600-1400 mm.

It rains during winter and spring months only. From a glance of the figures given above it is evident that the country as a whole is not arid, though the majority of the area is dry. The mountain regions of the north receive a good amount of rainfall which is normally sufficient for cultivation of winter crops. Forest vegetation and fruit trees have developed in this area especially around the many mountain streams. The mountain regions are of open forest types.

Physiography

Iraq can be broadly demarcated into eight main physiographic divisions :—

1. *Alluvial Plain of Lower Iraq.*—From Daltawa about 100 km. north of Baghdad to the shore of Persian Gulf. It is the old delta of the rivers Tigris and Euphrates.

2. *Marshes.*—Greater part of this area lies between Amara and Nasiriya forming permanent marsh. Other permanent marshes occur between Amara and Basra. These have been formed by the flooding of the low lands by two rivers. Usually this area is utilized for rice cultivation and for grazing.

3. *Deserts*

(*a*) *Southern Desert.*—An arid sandy and pebbly plain lying south of the Euphrates and to the north limit to the Saudi Arabian Desert, is an extremely dry region. Its altitude ranges between 20 and 200 m. The average rainfall is 100 mm.

(*b*) *The Western Desert.*—West of Euphrates the land rises gradually up, to form the plateau of the Syrian desert, an immense tract of land which practically separates Iraq from Syria, Trans-Jordan and Saudi Arabia. The entire land is practically uninhabited except by the Baduins who bring their flocks and camels there to pasture at certain seasons of the year. The south and the west deserts occupy 170,000 sq. km. of land. The rainfall is about 150 mm.

4. *The Jazira Desert.*—Lies between the Tigris and the Euphrates, north-west of Baghdad. It is traversed for the greater part of its length by Wadi and lake of Tharthar. Most of the parts of this tract are uninhabited but in spring and winter the Baduins pasture large flocks of sheep and herds of camels here.

The total area of the three deserts and other desert areas occupies about half of the land mass of Iraq.

5. *Ghurfa.*—The area between Tigris and Diyala rivers is called Al-Ghurfa (the room). It is also uninhabited except the south-east region by the Adhaim river. It is a good grazing land.

6. *The Jabal Hamrin Range.*—Low range of dry hills from a point about 96 km. north-east of Baghdad to the upper limit of Ghurfa plain. Height varies from 140—200 meters.

7. *The Sub-Montane Plain.*—From north Jabal Hamrin to the Kurdish foot hills. It is an undulating plain about 150—250 m. above sea level. Most of this area is fertile and good for cultivation. The rainfall is greater than in the other areas mentioned above.

8. *Kurdish Mountains.*—It lies to the north-east of the line Zakho, Dohuk, Acra, Chemchemal and Qasr-Shirin with extensive ranges varying in altitude from 450—3450 m. The inhabitants are principally cultivators who also graze animals.

Vegetation

Vegetation is scarce in large parts of Iraq especially in summer. Forest vegetation occurs only in the Kurdish mountains. Human activity has disturbed natural vegetation to a great extent.

Due to its geographical position, the flora of Iraq displays much heterogenous phytogeographical peculiarities. Three principal plantgeographical elements are represented in Iraq.

1. *The Mediterranean Elements* are represented by a number of Mediterranean weeds occurring in cultivated fields. It is believed that these weeds are either the eastmost representatives of the Mediterranean flora or relics of the Tertiary Palaeo-Mediterranean vegetation.

2. *The Irano-Turanian Elements* are the most important, occurring in the vast area of the Syrian Desert and Jazira and in the hills and mountains.

3. *The Saharo-Sindian Elements* occurring in the Southern Desert and also in the whole of Mesopotamian Plain.

Vegetation may roughly be divided into five important types :—

(1) Desert vegetation
(2) Steppes
(3) Marsh and aquatic vegetation
(4) Woodlands
(5) Vegetation of high mountain zone

(1) *Desert Vegetation.*—Comprises in Iraq the Saharo-Sindian territory and also partly the Irano-Turanian territory.

Typical desert plants are :—

1. *Haloxylon salicornicum*
2. *Rhanterium epapposum*
3. *Zizyphus nummularia*
4. *Zilla spinosa*
5. *Fagonia bruguieri*
6. *Astragalus spinosus*
7. *Zygophyllum coccineum*
8. *Citrullus colocynthis*
9. *Peganum harmala*
10. *Anvillea gracini*
11. *Iris sisyrinchium.*
12. *Planatago ovata.*
13. *Ephedra alata,*
14. *Cistanche tubulosa.*

(2) *Steppes.*—The steppe vegetation, the most dominant vegetation in Iraq, consists of hemicryptophytes (chiefly grasses) and chamaephytes (chiefly dwarf shrubs) forming more or less dense groups or open groups. The following plants are most abundant in th se steppes and play an important role as leading species :—

1. *Artemisia herba-alba*
2. *Achillea santolina*
3. *Leontice leontopetalum*
4. *Astrogalus russeli*
5. *Phloemis bruguieri*
6. *Phloemis oriantalis*
7. *Andropogon laniger*
8. *Poa bulbosa*
9. *Carex stenophylla*
10. *Bellevalia glaucum*
11. *Gagea chlorantha*
12. *Ranunculus falcata*
13. *Minuartia tenuifolia*
14. *Aegilops speltoides*
15. *Cousini stenocephala*
16. *Haplophyllum filifolium*
17. *Hypericum oliveri*
18. *Achillea micrantha*
19. *Adonis dentata*
20. *Koeleria phleoides*
21. *Verbascum damascenum*
22. *Haloxylon articulatum*
23. *Salvia palaestine*
24. *Scrophularia xanthoglossa*
25. *Gysophilla pallida.*
26. *Satice spicata.*

(3) *Marsh and Aquatic Vegetation.*—About 16000 sq. km. of the area is occupied by marshes, especially in the lower Iraq. A list of the common plants in this area is given below :—

1. *Salix acmophylla*
2. *Populus euphraticus*
3. *Tamarix pentendra*
4. *Phragmitis communis*
5. *Typha angustata*
6. *Juncus maritmus*
7. *Juncus frontanesii*
8. *Scripus littoralis*
9. *Alisma lanceolatum*
10. *Ceratophyllum demersum*
11. *Limnanthemum indicum*
12. *Potomogeton pactinatum*
13. *Salvinia natans*
14. *Marsilea aegyptiaca*
15. *Ranunculus aquanticus*
16. *Cyperus longus*

(4) *Woodland Vegetation.*—The mountainous parts of Iraq in the north and east constitute a woodland vegetation. The most conspicuous features of the vegetation are formed by the oak forests. While the herbaceous species are rich, the arboreal types are comparatively limited in species. The following are the dominant species which form an arboreal range :—

1. *Quercus persica*
2. *Quercus infectoria*
3. *Quercus libani*
4. *Quercus brantii*
5. *Pistacia mutica*
6. *Pistacia khinjuk*
7. *Acer monspessulanum*
8. *Acer cinerascens*
9. *Crataegus azarolus*
10. *Crataegus heterophylla*
11. *Pyrus syriaca*
12. *Cotoneaster nummularia*
13. *Rhamnus kurdica*
14. *Rhamnus cornifolia*

Ecologically these forests resemble the Eurosiberian than the Mediterranean type. No ever-

green tree occurs in these forests. They are confined mainly between 650 m. and 1700 m. altitude.

Some minor formations may also be found in these oak forests ad pted to local soil condition. Apart from the oak forests occupying the greater part of the mountain region there also occur some forests with *Pinus brutia* as a leading plant. They are confined only in Atrush and Zawitah (north of Dohuk). *Quercus persica, Pistacia mutica* and *Juniperus oxycedrus* are frequently found in this region.

(5) *High Mountain Zone.*—This zone is confined to the north Kurdish mountain in the north-east of Iraq and in average lies between 2000 and 3000 m. The summit of this mountain, the Arl Gird Dag, is the highest point in Iraq (3450m.). Above 2000 m. the zone is termed by Handel-Mazetti as 'Dornpolsterstrafe' or Thorn Cushion zone as the herbs and shrubs in this area usually grow in the form of low thorny cushion. The habit of these plants is extremely xerophytic and the leaf surface is much reduced, often the leaves being modified into spines, and the whole plant becoming compact and dense suited for protection against rapid transpiration and strong wind current. The dominating species belong to Astragalus, Acanthophyllum *A cantholimon* and *Onobrychis Astragalus cardochorum, Acanthophyllum crassiformis, Acantholimon calverti and onobrychis cornutal.*)

Of the other plants as associates mention should be made of the following :—

Anchonium elychrysifolium
Arabis caucasia
Pyrethrum kotschyi
Artemisia splendens
Scutellaria pinnatifida
Silene odontopetala
Achillea vermicularis
Galium kurdicum
Thymus kotschyanus
Stachys lavandulaefolia
Helichrysum pallasii
Pyrethrum millefoliatum
Physoptychis gnaphalodes
Silene subulata
Erygeron amorphoglossum
Asperula prostrata
Pholomis rigida
Lamium tomentosum
Alyssum lanigerum

A dense association of *Vicia gregaria* is common in many damp situations.

References

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