

PHYTOSOCIOLOGY

Very little has been published on the plant communities of our territory. Zohary (1940) mentioned a few in his " Geobotany of the Syrian Desert ". More recently, Long (1956) very briefly listed a dozen more of the leading communities in the Western and Southern Deserts of Iraq and in the Eastern Alluvial Plain (between the Kut-Amara stretch of the Tigris and the Persian border foothills). Meanwhile it is often not clear what particular conditions of the habitat are responsible for the development of a specific community. Nevertheless, in view of the paucity of literature on the subject we record below what we know of some of the leading plant communities in our territory, incomplete though our knowledge may be:

(A) ASSOCIATIONS OF THE DESERT

The most characteristic plant communities of the desert, more than twenty desert association of Iraq, some of them occupying many hundreds of square kilometres of territory some of them are as follows :

(1) **Haloxyletum ammodendri**. This community has not previously been described from Iraq, no doubt because it is only found in a few remote and extremely sandy desert places difficult of access: also because it has largely been destroyed in the more accessible sandy places where it was formerly to be found in abundance. The dominant species of the community is *Haloxylon ammodendron* (*H. persicum*), a woody shrub of tree-like form, some 2-3 m. high, in appearance not unlike a tamarisk. Gillett (1948, 5) records a stump, from 40 km. N.N.E. of Ramadi, which was 12 cm. in diameter and forty-nine years old by its annual rings.) *Calligonum comosum* is often associated with it and, in the Jazira, *Ammothamnus gibbosus*, two rather smaller shrubs than *Haloxylon*. Other common members of this community are *Haloxylon salicornicum*, *Salsola jordanicola* and other spp..

(2) **Zizyphetum nummulariae**. Zohary (1940) only once observed this community in Iraq: in the Wadi Muhammadi, west of Ramadi, i.e. the Western Desert. He also saw single shrubs of *Z. nummularia* near Luqait, between Basra and Ur. *Lycium depressum* (SARIM or 'AUSAJ) is nearly

always abundantly associated with *Z. nummularia*; *Ephedra foliata* is occasionally found in this community. Under the shade and protection of the two leading shrubs a number of meadowy grasses اعشاب مروج and other small herbs flourish: *Cynodon dactylon*, *Phalaris minor*, *Pimpinella eriocarpa*, *Convolvulus pilosellaefolius*, *Anagallis arvensis*, *Trigonella anguina*, *Emex spinosus*, etc.

(3) Artemisietum herbae-albae

As Zohary points out (1940, p. 75), the *Artemisietum herbae-albae* may appear in two aspects:

- a- The spring aspect generally rich in annuals (and in the steppe zone of the Syrian Desert often characterized by *Poa sinaica*)
- b- The summer or autumn aspect constituted by the late-flowering *A. herba-alba* and other generally chenopodiaceous perennials.

(4) Haloxyletum salicornici. Zohary (1940) considered this " probably the most important and most characteristic association of this territory " (i.e. the Saharo-Sindian territory of the Syrian Desert) and further remarked that " here it expresses Saharo-Sindian conditions just as *Artemisietum herbae-albae* expressed Irano-Turanian conditions ". The dominant species of the community, *Haloxylon salicornicum* (RIMTH) usually grows on small hummocks formed of wind-blown sand collected about the bushes. In the Southern Desert we have observed local abundance, sometimes approaching co-dominance or occasionally even dominance, of any of the following major associates of *Haloxylon*: *Anabasis setifera*, *Salsola jordanicola*, *Seidlitzia rosmarinus*, *Cornulaca aucheri*.

(B) ASSOCIATIONS OF THE STEPPE

The Steppe Region in Iraq has been cultivated for centuries so that the original vegetation of much of the territory has been completely obliterated and destroyed. Similarly, in remoter parts of the steppe (such as the Jazira or, beyond the frontier of Iraq, the Syrian Desert), the annual grazing season has been longer than in the deserts to the south, so that both over-grazing and fuel gathering have taken a greater toll خسائر كبيره of the perennial vegetation. Thus even extensive tracts of territory outside the settled abode of mankind now represent degradation stages of plant communities not easy to reconstruct. However we will attempt to list briefly a few plant communities of the steppe region of Iraq:

(1) Pistacietum atlanticae. Relicts of this community which, according to Gillett, may have been characteristic of much of the Moist-steppe Zone in Iraq have been found on Jabal Qara Choq (near Makhmur) and on the northern foothills of Jabal Sinjar. Zohary (1940) placed it first among the prominent plant communities of the Irano-Turanian territory of the Syrian Desert, and considered it " the most important arboreal شجيري plant association " of that region. He observed that " the physiognomy of this forest type may be classed as park forest " (i.e. as what Gillett has termed a kind of savannah or open forest). " The trees are scattered and the spaces in between are occupied by herbaceous plants, mainly Irano-Turanian." He further mentions *Prunus microcarpa*, *Artemisia herba-alba*, *Noaea mucronata* and *Haloxylon articulatum* among the subsidiary shrubs and small bushes of the association. Zohary also gives details of the distribution of the *Pistacietum atlanticae* from Jabal Sinjar in Iraq and Jabal Abd al-Aziz (in Syria) through Syria, Palestine and Sinai westwards to North Africa (Tripolitania to Morocco) and the Canary Islands.

The leading species of the community in Iraq (where so few traces of it now remain) is *Pistacia atlantica* var. *kurdica* (*P. mutica*).

(2) Achillietum confertae. Traces of this community are to be found all over the Steppe Region, particularly in very stony places, rocky hillsides, etc. where cultivation has not been practicable. *Achillea conjerta* (QAISUM) is everywhere found as a weed in fields, in wadis and by the roadside. In the Upper Jazira, more than 100 km. south of Sinjar, near the margin of the dry-steppe and sub desert, there is an abrupt change of soil as one passes from the deep loam plain in the north to the shallow gypsiferous desert soil plain to the south: at this point there is an extensive tract of degraded *Achillietum conjertae*. *A. conjerta* is also found in the Western and Southern Deserts, the Lower Jazira and the Ghurfa-Adhaim desert, usually on gypsiferous sandy gravel soil, but sometimes on silty soils. We have not however found any sizeable patches of the *Achillietum* in these deserts, though *A. conjerta* is sometimes an abundant associate, approaching dominance here and there, in the *Artemisietum herbae-albae* and other communities.

(3) Asphodeletum aestivi. Loose or even comparatively dense stands of the giant asphodel, *Asphodelus aestivus*, are found on low terraces or in

slight depressions on gently-sloping hillsides in the northern part of the Upper Jazira (e.g. a little south of Pesh Khabur) and in other parts of the upper margin of the Moist-steppe Zone, giving a general coverage of 80-90% or more. *Gundelia*, *Phlomis*, *Prosopis*, *Poa* and many other associates, including most of the species mentioned above, are generally found in the *Asphodeletum*.

The ground layer is occupied by a carpet of *Poa sinaica* (10-20% coverage), with frequent *Carex stenophylla*, *Anemone coronaria*, *Hordeum bulbosum*, *Eryngium* sp. and occasional *Cynodon dactylon*: also occurring sporadically in the community are *Ranunculus orientalis*, *Erophila verna*, *Helicophyllum rauwolfii* (and another species), *Ornithogalum*, *Galium*, *Veronica* sp., etc.

(C) ASSOCIATIONS OF THE FOREST

The forest zone of Iraq is occupied by four main plant associations and their various degradation stages. Since these four communities have already been briefly described (pp. 84-5) we merely list them again here:

- (1) Quercetum infectoriae-libani.**
- (2) Quercetum brantii-infectoriae** (*Q. aegilopidia-infectoriae*).
- (3) Quercetum brantii** (*Q. aegilopidis*) with **Pistacia khinjuk**.
- (4) Pinetum brutiae.**

Where the forest has been seriously damaged or destroyed a whole series of secondary associations may now be found, ranging from a kind of open parkland with occasional relicts of the original trees or shrubs to shrubby or herbaceous steppic plant communities.

Loniceretum arboreae. This community is sometimes found in the upper part of the forest zone, for example at 1700 m. alt. within a short distance to the north-west of the village of Rost. The forest climax in this place is *Quercetum infectoriae-libani* but owing to the proximity of the village the oak trees have all been cut for timber and fuel and are now only represented by occasional coppiced shrubs. This has left *Lonicera arborea* dominant in the locality, as small trees or tall shrubs 3-4 m. high. Abundantly associated with it is *Crataegus azarolus* while the other conspicuous shrubs of the community are *Crataegus meyeri* and *Prunus carduchorum*.

(D) ALPINE AND SUB-ALPINE ASSOCIATIONS

There is a wide field for study here, but no detailed studies of the higher mountain vegetation have been conducted and the reader must be referred to the scanty information recorded on.

ECONOMIC PLANTS

In a broad sense any plant which is of use to man and his activities is an economic plant, whether used for food, animal fodder, fuel, ornament, etc., or as a source of raw material for industry. In the reverse sense any plant inimical to man or his activities may also be considered as an economic plant: for example, weeds which reduce the yield of crops of choke waterways, plants poisonous to livestock-and so on. The present work not only covers the native wild plants of Iraq but also deals briefly with our crop plants, garden plants and all other alien species which have been noted in our territory.

There is a wealth of plant folk-lore التراث الشعبي among the country people of Iraq as of other lands. The nomad shepherds and camel-herds in particular know their own flora remarkably well even though they have never heard a latin name. They have their own traditional names for the majority of plants of the desert and steppe. They usually know whether any particular plant is of value for grazing or if it is harmful to their flocks and herds: they know the value of each plant for fuel, and they will also tell you which plants yield medicines, dyes, soaps or other useful or harmful products. To a lesser extent the same is true of the farmers in our country districts who still retain an amazing amount of knowledge on the economic uses of their local plants, even now that herbs are gradually being superseded by marketed medicines and other products sold in the village shops.

With this aim in view, the present Flora of Iraq is not restricted to a mere illustrated catalogue of the Latin names of our plants, with their technical descriptions, such as can be consulted only by the professional botanist. Under each plant family, genus or species of major or minor economic importance there will be found a paragraphic or paragraphs,

written in a style intelligible to the layman and printed in a distinctive type, giving its common names and any traditional uses for the plant or group of plants in our country. This may be followed by some of the names and uses recorded in the literature of other countries. It is thus hoped to give the book a far wider scope than many other floras and that it may prove useful to people in Iraq not interested in the technical details of botany: research workers, teachers and students in other fields of science, veterinary officers, irrigation engineers, farmers, industrialists, etc., as well as to agriculturists, horticulturists, forest officers and the like.