WILD LIFE PROTECTION IN ISRAEL
(Flora and Vegetation)

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INTRODUCTION.

The flora and vegetation of Israel have, during the last two decades, undergone rapid changes, resulting from large-scale enterprises of soil reclamation, afforestation and expansion of cultivated lands. Considerable number of natural habitats have been or are about to be destroyed, and a large part of the primaeval landscape is about to be changed into a secondary and artificial one. Scores of plant species have already disappeared from this country, and others, which are becoming extremely rare, are threatened with complete extinction. One whole series of plant communities has been annihilated, others have changed their composition and are doomed to extinction in the very near future.

Modern mechanized methods of agriculture, industry and building have not only inflicted heavy damage on such relics of nature as have withstood man's interference during millennia, but have entirely upset the equilibrium which until recently existed between man and his vegetal environment.

The lack of alertness and vigilance among governmental bodies towards the protection of wild life may soon lead to the complete disappearance of highly valued aspects of the country's natural character. This may result in a heavy loss to science in general, since this country is a meeting place of three large plant-geographical regions, and series of genera and species have their terminal outposts here.

The following examples will perhaps illustrate the extent of destruction to the flora and vegetation during recent times, showing the urgent need of nature protection in this country.

Recent disappearance of plants from the local flora.

The following species, including some endemic or otherwise rare plants, have not been rediscovered during the last few years :

HYDROPHYTES : *Nymphaea caerulea, Callitriche pedunculata, Utricularia vulgaris, Wolffia arrhiza, Lemna trisulca, L. polyrrhiza, Scutel-*

laria galericulata, Iris grant-duffii, Marsilia diffusa, Dipsacus lacinatus, Hydrocharis morsus-ranae, Cyperus latifolius, C. lanceus, Fuirena pubescens, Cladium mariscus, Scirpus cernuus, Apocynum venetum, Ankyropetalum gypsophiloides, Ipomoea sagittata.

OTHER PLANTS: *Myosotis uncata, Saxifraga hederacea, Allium carmeli, Scrophularia telavivensis, Scaligeria hermonis, Alchemilla vulgaris, Bupleurum gerardi, Geranium libanoticum, Hypericum hyrcinum, Aegilops crassa, Mosheovia galilaea, Lathyrus gloeospermus, Convolvulus palaestinus, Viola pentadactyla, V. modesta, V. odorata, Lachnophyllum hierosolymitanum, Chlamydophora tridentata, Alkanna galilaea, Calamintha graveolens, Salvia eigii* and many others.

Rare species on the verge of extinction:

Lilium candidum.
Ophioglossum lusitanicum.
Pteris longifolia.
Paeonia corallina.
Antirrhinum majus.
Michauxia campanuloides.
Campanula aaronsohnia.
Cyclamen coum.
Rumex rotschildianus.
Himantoglossum bolleanum.
Iris haynei.
Iris nazarena.
I. lortetii.
Ophrys ssp.
Sternbergia lutea.
Allium schuberti.
Phyllitis scolopendrium.
Asplenium adiantum-nigrum.
Juniperus oxycedrus.
Ulmus sp. n.
Hyphaene thebaica.
Pistacia saportae.
Fraxinus syriaca.
Cupressus horizontalis.
Euphorbia dendroides.
Acacia laeta.
Tamarix genessarensis.
Maerua crassifolia.
Moringa aptera.
Cocculus pendulus.
Silene chloraefolia.
Dianthus pendulus.
Salvia brachycalyx.
Scandix palaestina.

and many others.

Vegetation units threatened with extinction.

Several plant communities have recently been heavily damaged. The only small remnants or fragments left are in danger of disappearing entirely, unless given prompt protection. A few examples are mentioned here.

Hydrophytic vegetation was the first to suffer from large-scale draining activities carried out recently. The Huleh swamps in the northern part of the country were until recently one of the largest centres of the near-eastern hydrophytic vegetation which included,

among others, a series of tropical plant communities that reached here their northernmost limits. Only a small portion of these communities (e.g. *Cyperetum papyri, Polygoneto-Sparganietum neglecti*) has been left as a protected area by the government. Similar but smaller hydrophytic vegetation areas have been completely destroyed in the Sharon Plain.

In the Coastal Plain only small remnants of Mediterranean halophytic communities were left. Their destruction threatens some very rare species with extinction. In the same plain, the *Eragrostis bipinnata-Centaurea procurrens* association is about to disappear as a result of the rapid extension of citriculture.

There are a few « sacred forests » in the Mediterranean territory which have been preserved through the ages, testifying to the beauty of landscape in the distant past. They are also reliable indicators of climaxes in various areas, dominated to-day by « man-made deserts ». These invaluable remnants are threatened with destruction, unless prompt measures are taken to give them the necessary protection. Examples are the remnants of *Pistacietum atlanticae* in the Dan Valley (Upper Galilee) and on the « Tsherkas Hill » in the Sharon Plain, the stands of ancient and beautiful *Quercus calliprinos* on Mount Carmel and in Aqua Bella (near Jerusalem). Tropical Savannah vegetation, mainly of the Sudanian element and a relic of the Tertiary Period, is represented in Israel in only one station in Ein Gedi (the western shore of the Dead Sea). Recently most of it has been destroyed by settlers and only a few trees that require protection have been left.

The above are a few examples only of the many sites which urgently require protection in order to save rare species and plant communities from extinction. Government bodies could be very helpful in this matter if they were advised and assisted by the International Union for Conservation of Nature.

The Botany Department of the Hebrew University has recently submitted to the Government a map indicating over sixty sites that deserved prompt protective measures, but only a few of these have received attention.

The Society for the Protection of Nature has recently been established in this country with the purpose of enlightening the general public as to the importance of nature protection, and educating youth organizations and industrial concerns in the care of nature and natural resources. So far, this society has been more successful in the educa-

tional side of its programme than in the actual setting up of protected areas. It is, however, hoped that firm insistance on the part of this society will bring about legislative measures for nature protection and that the establishment of protected areas by government authorities will be seriously considered in the not too distant future.