A geobotanical study of Ephedretum gerardianae in north central Nepal*

by S. KOJIMA, Toyama

with 2 photos, 2 figures and 5 tables

Abstract. Vegetation and soils of Ephedra gerardiana community in north central Nepal were studied. A new association Ephedretum gerardianae was proposed. It is a vegetation type representing phytogeocoenoses which developed in the arid climate of the rain shadow areas of the Great Himalaya, where more than 300 mm of annual water deficit occurred. Soils are strongly calcareous owing to restricted leaching and to the preponderant occurrence of limestone parent materials. Cattle grazing which selectively removes palatable plants such as grasses appears to be one of the important factors promoting the Ephedra gerardiana community. The association thus seems to represent a disclimax vegetation of the arid regions along the Great Himalaya.

1. Introduction

Ephedra gerardiana Wall. (sensu lato) occurs widely in arid regions along the great mountain chains of the Karakoram Ranges and the Great Himalaya, extending from Afghanistan to Butan and further into Tibet, Yunnan and Szechwan, China (HARA et al. 1978, WU 1983a). It is a small gymnosperm which has a unique morphology. Its leaves are reduced to scales attached to the nodes and its stems function as photosynthetic organs. Its growth form resembles the horsetail (Equisetum) though it has no taxonomic relation to it at all.

Although its economic value is rather low, Ephedra gerardiana is well known for its medicinal use as it contains the alkaloid ephedrin (MIURA & NAGAI 1887, GROFF & CLARK 1928, MIKAGE et al. 1987). In addition, it is widely used locally as a forage plant. It is important for cattle, sheep and goat, in the arid Himalayan regions.

In Nepal, it occurs widely in arid regions in the northwestern part of the country. DOBREMETZ & JEST (1971), in their Carte écologique du Népal, listed

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