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I. Introduction

A. Statement of the problem

The genus Chenopodium is a cosmopolitan genus of primarily weedy annuals. A few species are of significant economic importance as weeds, food plants and as a source of an essential oil used as a vermifuge. C. quinoa and C. pallidicaule of the Andes and C. nuttalliae of Central Mexico are utilized as grains and are therefore sometimes called pseudocereals. C. nuttalliae also is used as a vegetable. Morphologically C. pallidicaule is a very distinct species. C. quinoa and C. nuttalliae, on the other hand are rather similar, and this study will primarily concern them.

The goals of this study have been to elucidate the systematics and origins of these two cultivated plants. Of particular interest in this regard, is the determination of the nature of the weedy, black seeded chenopodiums often called "ashpa quinoa" which are frequently found in association with white seeded cultivars. It was hoped that a study of these two cultivated chenopodiums may shed more light on the fascinating problem of cultural contact in pre-Columbian times of the people of Mexico and South America (see Heiser, 1965); in this connection the Mexican and South American cultivated chenopods have been analyzed in an attempt to determine whether cultivated chenopods were exchanged in pre-historic times. By studying the systematics of these plants one can determine the likelihood of separate or common