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## 1. Introduction

Natural hybridization between *Cardamine rivularis* and *C. amara* in a subalpine station at Urnerboden (Central Switzerland) was first noted in 1971. A general morphology and chromosome numbers of both parent species as well as the hybrids were then studied. It was found that the hybrids represented a triploid level ( $2n=24$ ) although both their parent species were diploid with  $2n=16$ . Differences in chromosome size occurring between *C. rivularis* and *C. amara* permitted to distinguish the resp. parent genomes within the triploid set: 16 chromosomes of *C. rivularis* type and 8 of *C. amara* occurred invariably in all 337 studied plants (URBANSKA-WORYTKIEWICZ and LANDOLT 1972, 1974, 1977, URBANSKA-WORYTKIEWICZ 1976, 1977b, URBANSKA-WORYTKIEWICZ unpubl.). Except for a few individuals, the 24chromosomic plant had non-dehiscent anthers or were extremely high sterile (97-98%). None the less, they indiscutably predominated within the population covering about 16 hectares.

The station at Urnerboden was often revisited during 1972-1977; in 1973, fertile hexaploid plants ( $2n=48$ ) were found within a sector of the population (URBANSKA-WORYTKIEWICZ and LANDOLT 1974, 1977, URBANSKA-WORYTKIEWICZ 1976, 1977b).

The striking numerical supremacy of the triploids as well as the appearance of the hexaploids at Urnerboden suggested that particular mechanisms may favour the production of hybrids and their biological success. A detailed study on ecological genetics was therefore undertaken; the present paper deals with the reproduction of the 24chromosomic plants.

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