



## A new species of *Aquilegia* (Ranunculaceae) from Sardinia (Italy)

GIANLUIGI BACCHETTA<sup>1</sup>, SALVATORE BRULLO<sup>2</sup>, ANGELINO CONGIU<sup>1</sup>, GIUSEPPE FENU<sup>1,\*</sup>,  
JOSÉ LUIS GARRIDO<sup>3</sup> & EFISIO MATTANA<sup>1</sup>

<sup>1</sup>Centro Conservazione Biodiversità (CCB), Macrosezione Botanica ed Orto Botanico, Dipartimento di Scienze della Vita e dell'Ambiente, Università degli Studi di Cagliari, Viale S. Ignazio da Laconi 11-13, I 09123 Cagliari, Italy; e-mail: bacchet@unica.it; angelinocongiu@tiscali.it; gfenu@unica.it; mattana.efisio@gmail.com

<sup>2</sup>Sezione di Biologia Vegetale, Dipartimento di Scienze Biologiche, Geologiche ed Ambientali, Università degli Studi di Catania, Via A. Longo 19, I 95125 Catania, Italy; e-mail: salvo.brullo@gmail.com

<sup>3</sup>Estación Biológica de Doñana, Consejo Superior de Investigaciones Científicas (CSIC), Avenida Américo Vespucio, s/n, 41092, Sevilla, Spain; e-mail: jlgarrido@ebd.csic.es

### Abstract

The new species *Aquilegia cremnophila* (Ranunculaceae) from the Italian island of Sardinia is here described and illustrated. It occurs in shady rocky crevices, near the upper parts of Mt. Corراسi (Supramontes Region), where it is a member of chasmophilous communities. This species is morphologically, phenologically, ecologically and genetically well differentiated from the other Sardinian taxa, showing some relationships mainly with *A. nugorensis*, an endemic species of Central-Eastern Sardinia. Its conservation status is examined. A key of all taxa present in Sardinia is also provided.

**Key words:** columbine, endemic flora, Mediterranean Basin islands, taxonomy

### Introduction

*Aquilegia* L. is a genus of Ranunculaceae distributed across circumboreally (temperate Asia, Europe and North America), where it is represented by ca. 66 taxa (Garrido *et al.* 2012, and references therein). This genus groups herbaceous geophytes characterized by a well-developed rhizome with an erect, usually pubescent stem growing from a basal rosette with bi- or triternate compound leaves. Hermaphrodite flowers are radially symmetrical and exhibit five sepals and five petals, each petal consisting of a flat limb and a backwardly directed, nectar-secreting spur. Basal rosettes sprout in spring and develop one or more stems with inflorescences, eventually fructifying in summer (Cullen & Heywood 1964, Whittemore 1997, Nold 2003).

During field investigations in Sardinia, very peculiar population of *Aquilegia*, occurring at calcareous rocky crevices of Mt. Corراسi (Oliena, Central-Eastern Sardinia) were found. They were previously doubtfully attributed to *A. nugorensis* by Fenu *et al.* (2010). According to Arrigoni & Nardi (1977, 1978) and Arrigoni (2006), three endemic species of this genus are quoted for Sardinia: *A. barbaricina* Arrigoni & Nardi (1977: 265), *A. nugorensis* Arrigoni & Nardi (1978: 220), and *A. nuragica* Arrigoni & Nardi (1978: 215), which usually grow in wet places. Although the population of Mt. Corراسi exhibits some features in common with *A. nugorensis*, it differs in numerous relevant morphological characters, such as the colour, shape and size of the perianth, as well as in phenology and ecology.

In order to clarify the correlation between the Sardinian *Aquilegia* taxa, genetic and eco-physiological analyses were carried out (Garrido *et al.* 2012, Mattana *et al.* 2012). In particular, Garrido *et al.* (2012) highlighted that the population of Mt. Corراسi appeared genetically differentiated from all the other known species. Mattana *et al.* (2012) also identified a different behaviour in the seed germination in the Mt. Corراسi