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A taxonomic survey of the genus *Vitis* L. (Vitaceae) in Italy, part II: the 'Euro-American' hybrids

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Abstract

New names are assigned to two 'Euro-American' nothospecies of *Vitis* originating from the artificial crossing of Euro-Mediterranean *V. vinifera* with two American species, employed both as rootstocks and for wine production, and spontaneously occurring in Italy and other European countries: *V.* ×*bacoi* (= *V. riparia* × *V. vinifera*) and *V.* ×*goliath* (= *V. riparia* × *V. rupestris* × *V. vinifera*). Original and detailed descriptions, illustrations and information on distribution and ecology are provided, along with an updated identification key. Late-season leaf pigmentation, presence/absence of phylloxera galls, ripe berries flavor, and seed morphology proved to be useful characters for the identification of the treated species and nothospecies. Nomenclatural aspects regarding *V. riparia* × *V. vinifera* are also discussed.

Key words: alien species, Italy, nothotaxa, seed morphology, systematics, *Vitis*

Introduction

The current paper represents a continuation of the first taxonomic survey of the genus *Vitis* Linnaeus (1753: 202, 1754: 95) in Italy (Ardenghi *et al.* 2014), an increasingly consulted work for the identification of wild grapes in Europe (see e.g., Iamonico 2014, Iamonico *et al.* 2014, Montanari *et al.* 2014, Villa & Arrigoni 2014, Ardenghi 2015, Ardenghi & Bernardo 2015, Ardenghi & Maggioni 2015, Bernardo 2015, Gariboldi & Ardenghi 2015, Nicolella *et al.* 2015, Conti & Bartolucci 2015), followed by the record of *Vitis* ×*novae-angliae* Fernald [1917: 146 (144−147)] (pro sp.) (Ardenghi *et al.* 2015).

While the first contribution focused on the species and the binary hybrids between American taxa employed as rootstock and the second one on an American-American hybrid, the present work deals with the 'Euro-American' nothotaxa originating from the crossing of Euro-Mediterranean *V. vinifera* Linnaeus (1753: 202) with American species, in our case *V. riparia* Michaux (1803: 231) and *V. rupestris* Scheele (1848: 591). Most of these hybrids were obtained to be used as 'direct-producers', an early strategy against the spread of phylloxera (*Daktulosphaira vitifoliae* Fitch in Shimer 1866: 365), downy mildew [*Plasmopara viticola* (Berkeley & Curtis in Ravenel 1848: 90) Berlese & De Toni 1888: 239], and powdery mildew [*Uncinula necator* (Schweinitz 1834: 270) Burrill in Ellis & Everhart 1892: 15] over the European continent, accidentally introduced from North America in the second half of the 19th century. Although this solution, which simultaneously allowed wine production and resistance to the new pests, appeared to be more expeditious and cheaper than grafting *V. vinifera* on hybridogenic rootstock, affected the quality of the final product, which acquired the peculiar flavors of American grapes, excessively bitter or 'foxy' for the oenological standards. Nevertheless, some of these wines, such as 'Clinton' and 'Bacò' [originating from the crossing of *V. riparia* with *V. labrusca* (Linnaeus 1753: 203) and *V. vinifera*, respectively], had a relevant success in Europe until the 1950's, especially among the working classes (Galet 1988, Eynard & Dalmasso 1990, Ardenghi *et al.* 2015). On the other hand, a number of 'Euro-American' hybrids are still used as rootstock. Among them *V. rupestris* × *V. vinifera* 'Aramon-Rupestris Ganzin n° 1' and '1202 C', *V. berlandieri* Planchon [1880: 425(–428)] × *V. vinifera* '41 B', and *V. riparia* × *V. rupestris* × *V. vinifera* 'Golia' (Galet 1988, Eynard & Dalmasso 1990).

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