

DISCOVERY OF A NEW POPULATION OF THE SPECIES COMPLEX
OF THE WHITE-CLAWED CRAYFISH, *AUSTROPOTAMOBIOUS*
PALLIPES/ITALICUS (DECAPODA, ASTACIDAE) IN MONTENEGRO,
RANGE EXTENSION, ENDANGERMENT, AND CONSERVATION

BY

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ABSTRACT

Within the scope of a research project on decapod crustaceans in Montenegrin aquatic ecosystems, a population of white-clawed crayfish of the *Austropotamobius pallipes/italicus* species complex has been recorded for the first time. Based on an analysis of morphometric and genetic parameters, it has been established that *Austropotamobius italicus* (Faxon, 1914) and its subspecies *meridionalis* are distributed in Dalmatia and in the central and southern parts of the Apennine Peninsula. The new finding represents: (1) extension of the known range of the species complex *A. pallipes/italicus* on the Balkan Peninsula, and (2) determining the limits of the distribution and of this isolated population of that complex. The ascertained characteristics of the white-clawed crayfish's newly discovered population in Montenegro are significant from the viewpoint of global conservation of the species in question.

RÉSUMÉ

Dans le cadre du projet de recherche sur les crustacés décapodes, dans l'écosystème aquatique du Monténégro, on a trouvé pour la première fois une population de l'écrivisse à pattes blanches appartenant au complexe d'espèce *Austropotamobius pallipes/italicus*. A partir de l'analyse des paramètres morphométriques et génétiques on a établi qu'il s'agit de l'espèce *Austropotamobius italicus* (Faxon, 1914) et de la variété *meridionalis* qui est répandue en Dalmatie ainsi que dans la partie centrale et sud de la péninsule des Apennins. Cette nouvelle découverte montre:

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1. l'élargissement de la distribution du complexe d'espèce *A. pallipes/italicus* dans la Péninsule balkanique et 2. que c'est une population isolée et en limite de la distribution de ce complexe. Les caractéristiques de cette nouvelle population de l'écrevisse à pattes blanches rencontrée en Monténégro sont très importantes en terme de la conservation globale de cette espèce.

INTRODUCTION

Apart from being primarily focused on conservation planning, the Astacidea Conservation Project in the region of Montenegro has also been aimed at filling the existing gap in our knowledge of the family Astacidae in this part of Europe, in order to further complete the picture of regional crustacean diversity and distribution. With the exception of the reports by Karaman (1961) and Simić et al. (2008), crayfish in this area have not been examined in detail. In contrast, numerous data on the biology and ecology of the Astacidae are available from other parts of Europe, in particular on the complex formed by *Austropotamobius pallipes* (Lereboullet, 1858)/*Austropotamobius italicus* (Faxon, 1914), herein further referred to as the *Austropotamobius pallipes/italicus* species complex.

For the purposes of the present study, particularly important literature is found in those reports that deal with taxonomy and phylogeny, and which indirectly indicate major conservation problems (Karaman, 1961, 1962, 1963; Brodsky, 1977; Santucci et al., 1997; Grandjean et al., 1998, 2000; Grandjean & Souty-Grosset, 2000; Largiadèr et al., 2000; Edsman et al., 2002; Holdich, 2002; Fratini et al., 2005; Cataudella et al., 2006, 2010; Holdich et al., 2009; Kõiv et al., 2009). These authors have presented significant results by establishing that *Austropotamobius pallipes* (Lereboullet, 1858) in fact constitutes an element in a complex comprising two species, of which *A. pallipes* and *A. italicus* (Faxon, 1914) were defined first, and in which later on four subspecies have been described within *A. italicus*, as *A. i. italicus* (Faxon, 1914), *A. i. carinthiacus* Albrecht, 1981, *A. i. carsicus* M. Karaman, 1962, and *A. i. meridionalis* (Fratini, Zaccara, Barbaresi, Grandjean, Souty-Grosset, Crosa & Gherardi, 2005) (cf. Pedraza-Lara et al., 2010). These studies have also clarified the phylogeographic distribution of the species and subspecies of the *A. pallipes/italicus* complex as here listed.

The results of the present paper present an extension of the research hitherto reported, since a new population of a white-clawed crayfish from the *Austropotamobius pallipes/italicus* species complex has been found in the middle and lower courses of the Zeta River in the Montenegrin region. The discovery of this population means an extension of the known range of the species complex, which also constitutes a significant fact in the conservation programme of this globally endangered species of Astacidae.