Two new species of trouts, resident and migratory, sympatric in streams of northern Anatolia (Salmoniformes: Salmonidae)

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Two new species of trouts, resident and migratory, sympatric in streams of northern Anatolia (Salmoniformes: Salmonidae)

Davut Turan*, Maurice Kottelat** and Semih Engin*

Salmo rizeensis, new species, is described from the upper part of streams and rivers draining to the south and southeastern Black Sea, and *S. coruhensis*, new species, from the lower and the middle part of the streams and rivers of the same area. *Salmo rizeensis* is distinguished by a small size (maximum known size 250 mm SL); a single conspicuous black spot behind eye; black spots on the back and upper part of flank; no black spot on the middle part of body in specimens larger than 200 mm SL; red spots few, organised in three or four irregular rows on middle part of body, distinctly ocellated; maxilla long and narrow. *Salmo coruhensis* is distinguished by a large size (maximum size up to at least 800 mm SL); 4-17 black spots behind eye (cheek and preopercle) in large adult males; black spots on back, flank and middle part of body in males larger than 200 mm, very few in females smaller than 300 mm SL; number of black and red spots increasing with increasing size (not increasing in *S. rizeensis*); red spots in median part of body, surrounded by irregularly shaped white ring; maxilla short and narrow. The two species occur in sympatry in several streams, and occasionally in syntopy. Molecular analyses (nuclear [ITS1] and mitochondrial genes [cytochrome *b*]) show that they belong to distinct lineages and support their specific distinctness. In our study, the resident trouts of different drainages are more closely related to each other than to the migratory ones in the same drainages, and vice versa. This contradicts the credo that resident and migratory trouts in a given stream are only 'forms' of the same species with different life histories. We do not extrapolate this to be the case in other drainages and for other species, but this calls for a more cautious treatment of the taxonomy, diversity and conservation of trouts at a local level.

Introduction

Salmo trutta has long been considered to be a species widely distributed throughout Europe and reaching southward to the Atlas Range (Morocco, Algeria) and eastwards to the upper Amu-Darya drainage in Afghanistan. Over the years a great number of nominal subspecies of *S. trutta* or distinct species have been recognized, but there has always been the trend to negate this diversity, by claiming a priori that they all belong to a very variable "species" and that 'classical' taxonomy can not cope with this species. In recent years, molecular studies provided evidence of the existence of at least five molecular lineages (Bernatchez et al., 1992, 1995; Bernatchez, 2001), but the 'modern' biology has not been more successful at solving the taxonomy of the species. In fact,

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