South American Stoneflies (Plecoptera)

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The authors provide the first comprehensive coverage of the stoneflies (Plecoptera) of South America. The book covers 6 families and 47 genera of stoneflies and includes bilingual family and genus keys (English and Spanish) for adults and nymphs. The authors state that the book is intended for specialists in systematics and for ecologists, entomologists, limnologists, and general biologists.

The authors are renowned stonefly specialists who have published widely on the fauna of South America and have great knowledge about these poorly known groups. This book is important to anyone interested in the biodiversity of South America and especially to entomologists and zoogeographers because of the unusual affinities and relationships of the South American fauna with other continents, especially Gondwana. The fauna is very rich and diverse; one family (Diamphipnoidae) and all species and genera except Anacroneuria are endemic to the Neotropical region. Four families (Austroperlidae, Eustheniidae, Gripopterygidae, and Notonemouridae) have affinities with the Gondwanian land masses, and the family Perlidae has a wider distribution that includes Laurasia, Africa, and the Neotropics. The Holarctic stonefly fauna have not migrated south into this region, and this distribution makes the South American fauna extremely interesting. Many differences exist between the Andean and eastern Neotropical faunas, and these faunas are vastly different from the Nearctic fauna. Additional work on the South American fauna is greatly needed now in light of the continuing demand on the natural resources of this subcontinent and the effects of this demand on lotic ecosystems.

The book is organized into 10 chapters including Introduction, Taxonomic Characters and Family Keys, 6 chapters dealing with each family, References, and Index to Scientific Names. The book is well written and easy to understand, even for a nonspecialist. The family keys are based on easy-to-discern external morphology supported by good illustrations. The generic keys include many general external morphological characters, as well as important secondary sexual characteristics.

The introductory chapter provides background information on the higher classification and the history of Plecopterology in South America. The authors discuss the general biology and life history of stoneflies in general and of the South American fauna in particular. This chapter also provides important information on the fossil record from South America and habitat associations of particular genera and species that should be of great interest to Plecoptera specialists. In addition, the chapter includes sections on mating behavior, sampling methods, and preparation of specimens for study, and discusses the importance of internal and external genital study. A table at the end of the chapter provides the higher classification of the Plecoptera including family distributions, number of genera and species, and the generic distribution of the South American fauna.

Chapter 2 is devoted to descriptions of the important taxonomic characters used in identifying South American stoneflies. Family keys to the adults and nymphs (both English and Spanish) are included. Some of the line illustrations are supported by scanning electron micrographs (SEMs) to clarify illustration of complex structures. The wonderful SEMs providing details of the poorly known ova are especially important. The keys are well written and should be easy to use with the supportive illustrations, even by a nonspecialist.

The 6 family chapters provide information on the taxonomy, important adult and nymph characters, distribution, biology, and keys to the genera for adults and nymphs. Each genus is discussed, and sections on taxonomy, adult and nymphal characteristics, biology, distribution, and species lists are included. The information on the biology of each genus, although usually sparse, should prove to be invaluable for workers interested in collecting specific taxa.
In summary, I recommend this book highly to anyone interested in the aquatic fauna and biodiversity of South America. It will be especially important to stonefly workers who might have an interest in working in the region in the future. The compiled references are invaluable because they provide a single source for the pertinent literature for this region of the world.

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