

## PREFACE

Lungless salamanders of the family Plethodontidae are not only fascinating animals in and of themselves, but have served as model organisms in a broad range of pioneering studies in systematics, ecology, behavior, genetics, and many other areas of evolutionary and comparative biology.

The southern Appalachian Mountains represent a center of diversification of plethodontids—three of the four major subdivisions of the family occur here, species richness is high, and populations are often very dense. For these reasons, the area has long attracted specialists interested in plethodontid salamanders. From its very beginning in 1927, the Highlands Biological Station has played a major role in research efforts directed at these amphibians. Edwin Reinke, Claude Chadwick, Clifford Pope, Nelson Hairston, Sr., and Robert Gordon conducted research on salamanders at the Station in its early years, establishing a tradition that has been extended by legions of later herpetologists. Thus, it was only natural that in 1972 the Station initiated a series of conferences to promote dissemination of current research on plethodontids. The present volume represents a selection of papers deriving from the fourth plethodontid conference, held in June 1998. Although papers from the earlier conferences have appeared in a variety of formats, this is the first time that a formal conference volume has been published.

It seemed appropriate to use the venue of the fourth conference to honor the research of our esteemed colleague, Richard Highton, on the occasion of his formal retirement from The University of Maryland. His ground-breaking research on molecular systematics and speciation in plethodontids dates from the late 1960s, when allozymes were first being used to address questions in these fields. Two of us can remember that Dr. Highton's presentation at the very first plethodontid conference generated a lively discussion on the usefulness of allozymes in systematics. Accordingly, the long and productive career of Richard Highton was celebrated by beginning the fourth conference with a symposium in his honor. The symposium featured papers presented by specialists on amphibian systematics, and these papers constitute the first section of this volume.

Other than the papers of the Highton Symposium, the organizers of the conference made no attempt to solicit contributions on specific topics in plethodontid biology. Thus, the remaining chapters represent a selection of the contributed papers and posters presented at the conference. We have grouped these contributions into two sections: the first a series of papers on a wide range of topics in evolutionary and comparative biology of plethodontids, the second a set of chapters more narrowly

focused on what we have called the behavioral ecology of small *Plethodon* (mainly *P. cinereus*). Whereas the former reflects the diversity of current research on plethodontid salamanders, the latter illustrates the usefulness of the smaller species of *Plethodon* as model organisms for investigation of a wide range of questions in behavioral ecology.

We recognize that the coverage is not comprehensive; several areas of research are underrepresented or missing altogether. This is a consequence of the relatively unstructured nature of the conference itself. We trust, however, that the volume conveys to readers the current status of research on plethodontids, and will stimulate interest by researchers in furthering investigation of the many unresolved questions pertaining to the biology of these remarkable animals.

Numerous individuals, too many to list individually, helped in the organization of the conference and the production of this volume, and we extend our appreciation to all of them. We do, however, wish to acknowledge the reviewers of chapters, whose cogent reviews have contributed immeasurably to the scientific quality of the volume. They are: Carl Anthony, Andrew Ash, Christopher Beachy, Paul Chippindale, Paul Cupp, Don Forester, Cary Guffey, James Hanken, Reid Harris, Todd Jackman, Elizabeth Jockusch, Allan Larson, Michael LeMaster, Dale Madison, Sharyn Marks, Jeremy Marshall, Alicia Mathis, Travis Ryan, David Sever, David Snyder, Judy Stamps, Stephen Tilley, Paul Verrell, and John Wiens. We are especially grateful to editors Adam Cohen and MaryAnn McCarra of Kluwer Academic/Plenum Publishers for their encouragement, support, and patience throughout.

Finally, in commending the volume to our readers, we remind them that another plethodontid conference looms on the horizon, in the not-too-distant future, in a pleasing setting somewhere in the misty forests of the southern highlands.

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