CURRICULM VITAE of ROBERTO BERTOLANI

Current position

Roberto Bertolani is professor emeritus at the University of Modena and Reggio Emilia, Italy

Education & Training

- 1969: "Laurea" in Biological Sciences, University of Modena,
- 1969-82: Assistant of Histology, University of Modena,
- 1982-90: Associated Professor of Zoology, University of Modena;
- 1990-2012: Full Professor of Zoology; Department of Animal Biology, Faculty of Bioscience and Biotechnology, University of Modena and Reggio Emilia;
- 1990-2012: Full Professor of Zoology; Department of Education and Humanities, University of Modena and Reggio Emilia. Academic appointments
- 1991-2000: Coordinator of the PhD course of Animal Biology;
- 2001- 2002: Coordinator of the PhD course of Evolutionary Biology;
- 2001- 2011: Coordinator of the PhD course of Evolutionary and Environmental Biology;
- 2002-2005: Dean of the Faculty of Mathematical, Physical and Natural Sciences;
- 2005-2006: Responsible of the Leonardo da Vinci project with the Universidade Lusófona de Humanidades e Tecnologias of Lisbon (Portugal)
- 2006–2012: Local coordinator of the Socrates-Erasmus Program in Biological Sciences between the University of Modena and Reggio Emilia and the University of Porto (Portugal).
- 2008-2010: Member of the Academic Senate as elected delegate for the area BIO-CHEM Other appointments

Other appointments

- 2011-2016: President of the “Società dei Naturalisti e Matematici di Modena”.
- 2014-2017: Secretary-Treasurer of the “Unione Zoologica Italiana onlus”.
- 2016-current: External Collaborator at the Civic Museum of Natural History, Verona

Research Experience

Roberto Bertolani began his researches with studies on the cytotaxonomy of tardigrades, evidencing several cases of polyploidy, subsequently recognised by studies on DNA content and genome size. For many of the following years, one of his main research interests has been the investigation of sexuality (hermaphroditism, gonochorism, unisexuality), the study of reproductive modes and strategies, in particular parthenogenesis and self-fertilization, and that of the life history traits. He has often used tardigrades, an ideal model for this kind of study. In this metazoan group he identified several cases of parthenogenesis, automictic and apomictic, the latter frequently linked to polyploidy. He also demonstrated the existence of hermaphroditism in the phylum and then evidenced the presence of self-fertilization in the hermaphrodites. He described the reproductive pattern of several gonochoric and hermaphroditic species and collaborated to the ultrastructural characterization of the male gametes. Collaboration on reproductive biology has been carried out on the mole. Moreover, utilising tardigrades as a model to study dormancy, he defined life history traits of some species in relationship to the ability to carry out anhydrobiosis and encystment. Recently he has evidenced the production of resting eggs in tardigrades, a form of dormancy unknown up to date in that phylum. His long experience with tardigrades has allowed him to expand his interests into the systematics of the group, erecting new species, genera and families and proposing new hypotheses on some evolutionary lines of the phylum, recently also with an ultrastructural and a molecular approach. Faunal studies have been carried out on tardigrades and other animals in freshwater, mosses,

leaflitter and in the caves. Professor Bertolani has also studied other animal groups facing different biological problems, such as the population dynamics of springtails and mites found in agroecosystems, in particular considering the effects of tillage and of herbicides. His competence on tardigrades, reproductive biology and freshwater biology has been repeatedly requested for the preparation of reviews for important international publishers. In particular, he published a handbook on Italian freshwater tardigrades, six chapters of the series "Reproductive Biology of Invertebrates", a chapter on the "Encyclopedia of reproduction" and a chapter on the "Encyclopedia of Inland Waters". He has been invited to participate in international collaborative projects involving tardigrades and many foreign researches have visited the Laboratory of Evolutionary Biology in Modena. He has participated to several international meetings on meiofauna, tardigrade biology, reproductive biology of invertebrates and chromosome research, and he organized or co-organised three International Symposia on Tardigrada (the 4th in Modena, 1985, the 10th in Catania, 2006 and the 13th again in Modena, 2015) and the Twelfth International Meiofauna Conference (Ravenna, 2005). He also organized the 74th National meeting of the “Unione Zoologica Italiana” in Modena (2013). He is a referee for numerous foreign and Italian journals.

Skills

Fields of Research:

- Evolution and adaptations in tardigrades: Reproductive biology, gametes and life histories (with particular emphasis to hermaphroditism and parthenogenesis); Karyotype and genome; Cryptobiosis: adaptive and microevolutionary aspects; Biogeography, phylogeny and taxonomy.
- Ecology of soil microarthropds of the agroecosystems: Effects of the herbicides;.Tillage effects.

Scientific acknowledgments

A genus and four species of tardigrades have been dedicated to him by several researchers:
Genus *Bertolanius* Özdikmen, 2008
Microhypsibius bertolanii Kristensen, 1982
Doryphoribius bertolanii Beasley & Pilato, 1987
Isohypsibius bertolanii Manicardi, 1989
Isohypsibius roberti Biserov, 1996