

Quaderni del Centro Studi Alpino – IV

UZI



76° CONGRESSO

15-18 settembre 2015

VITERBO

Proceedings of the 76th National Conference
of the
Unione Zoologica Italiana

A cura di Marzio Zapparoli, Maria Cristina Belardinelli



Università degli Studi della Tuscia
2015

Quaderni del Centro Studi Alpino – IV

Unione Zoologica Italiana
76th National Conference

Proceedings

Viterbo, 15-18 September 2015

a cura di Marzio Zapparoli, Maria Cristina Belardinelli

Università degli Studi della Tuscia
2015

Università degli Studi della Tuscia
Centro Studi Alpino

Via Rovigo 7, 38050 Pieve Tesino (TN)

Sede Amministrativa

c/o Dipartimento per l'Innovazione nei sistemi Biologici, Agroalimentari e Forestali,
Università della Tuscia
Via San Camillo de Lellis, s.n.c.
01100 Viterbo (VT)

Consiglio del Centro

Luigi Portoghesi (**Presidente**)
Gian Maria Di Nocera
Maria Gabriella Dionisi
Giovanni Fiorentino
Anna Scoppola
Laura Selbmann
Alessandro Sorrentino

ISBN: 978 - 88 - 903595 - 4 - 5

Viterbo 2015

*76th National Conference
of the Unione Zoologica Italiana*

Università degli Studi della Tuscia
Viterbo, 15-18 September 2015

Organizing Committee

Anna Maria Fausto (President), Carlo Belfiore, Francesco Buonocore,
Romolo Fochetti, Massimo Mazzini, Simona Picchietti, Nicla Romano,
Giuseppe Scapigliati, Marzio Zapparoli

Scientific Committee

Elvira De Matthaeis (UZI President), *Sapienza, Università di Roma*
Roberto Bertolani (UZI Secretary-Treasurer), *Università di Modena e Reggio Emilia*
Carlo Belfiore, *Università della Tuscia, Viterbo*
Giovanni Bernardini, *Università dell'Insubria, Varese*
Ferdinando Boero, *Università del Salento, Lecce*
Francesco Buonocore, *Università della Tuscia, Viterbo*
Gabriella Chieffi Baccari, *Seconda Università di Napoli*
Fiorenza De Bernardi, *Università di Milano*
Anna Maria Fausto, *Università della Tuscia, Viterbo*
Romolo Fochetti, *Università della Tuscia, Viterbo*
Cristina Giacoma, *Università di Torino*
Massimo Mazzini, *Università della Tuscia, Viterbo*
Simona Picchietti, *Università della Tuscia, Viterbo*
Stefano Piraino, *Università del Salento, Lecce*
Nicla Romano, *Università della Tuscia, Viterbo*
Giuseppe Scapigliati, *Università della Tuscia, Viterbo*
Alberto Ugolini, *Università di Firenze*
Marzio Zapparoli, *Università della Tuscia, Viterbo*

Organizing Secretary

Maria Cristina Belardinelli, *Università della Tuscia, Viterbo*
<https://sites.google.com/a/unitus.it/uzi/>

INDEX

Presentation	.....	p. 7
Introduction	.....	p. 9
Opening lecture	.....	p. 11
Symposium I		
<i>Reproductive strategies: behavioral, morpho-functional and evolutionary aspects</i>		
Invited lectures	.....	p. 15
Oral presentations	.....	p. 21
Posters	.....	p. 39
Symposium II		
<i>Physiological aspects and internal defenses system: evolutionary adaptations and applications in biotechnology</i>		
Invited lectures	.....	p. 47
<i>Workshop SPERA</i>	.....	p. 51
Oral presentations	.....	p. 57
Posters	.....	p. 73
Symposium III		
<i>The modern systematics: between structural morphology and molecular approaches</i>		
Invited lectures	.....	p. 81
Oral presentations	.....	p. 87
Posters	.....	p. 103
Open session		
Oral presentations	.....	p. 113
Posters	.....	p. 117
Author index	.....	p. 151

Presentation

The Centro Studi ALPino (CSALP) is an administrative unit of the Università della Tuscia (Italy), whose headquarter is in Tesino plateau (Trento province), with teaching and conference facilities located mainly in Pieve Tesino and research facilities mainly in Cinte Tesino. It was established in 2003 thanks to the efforts of two professors of the Università della Tuscia, Enzo Avanzo and Ervedo Giordano, the cooperation of the municipality of Pieve Tesino and the financial support of the government of the Trento Province. The Center is run by a management committee, appointed by the rector every three years, which includes representatives of all departments of the university.

The primary goals of CSALP are: (1) to provide logistical support for teaching and research activities in the alpine forest area; (2) to develop cooperation with local communities, national and international universities and research institutions; (3) to promote and host seminars, workshops, technical and scientific courses.

In the last ten years CSALP was involved in some research projects concerning environment monitoring and forest planning: (a) CARBOITALY (sponsor: MIUR - Italian Ministry for University and Research) aiming at the quantification of carbon sinks in forest and agriculture ecosystems; (b) MONFORINN (sponsor: Provincia Autonoma di Trento) with the goal of assess the use of high-resolution satellite images for forest monitoring; (c) PFIT Asiago e Cadore, Longaronese, Zoldano (sponsor: Regione Veneto) with the aim of developing innovative methods for inventory and decision making process in forest planning; (d) C_FORSAT (sponsor MIUR) with the aim of quantifying both gross (GPP) and net primary production (NPP) of Italian forest ecosystems with a spatial resolution of 1 km. CSALP is also part of MOUNTFOR, a Project Center of the European Forest institute, which acts as a network of national and international universities and research institutes to promote research activities in all the aspects of mountain forests.

Luigi Portoghesi
President of the CSALP Management
Committee

Introduction

Dear Colleagues,

on behalf of the Organizing and Scientific committees I would like to thank all participants to the 76th National Congress of the Unione Zoologica Italiana for having come so numerous to our annual meeting. It is a great honour for us that this important event is held here for the first time in Viterbo, at the University of Tuscia, in the prestigious medieval complex of S. Maria in Gradi. This historical building represents a significant example of how history and innovation can be fruitfully combined. History and innovation are the leitmotif of our young University, in which Zoology and Comparative Anatomy have played a remarkable role – both in cultural and scientific terms – ever since its foundation. The 76th National Congress of the Unione Zoologica Italiana intends to offer to the participants the opportunity to experience an amazing intellectual venture in the diversity and quality of the scientific knowledge that make our Society so rich. In this perspective, the 76th National Congress will approach such thought provoking themes as the ones planned for the following three Symposia:

1. Reproductive strategies: behavioral, morpho-functional and evolutionary aspects
3. Physiological aspects and internal defense system: evolutionary adaptations and applications in biotechnology
2. The modern systematics: between structural morphology and molecular approaches

Aim of these Symposia is to review the state-of-the-art of some topics and the innovative aspects that characterize recent research in Animal Biology. We should also emphasize how innovation does depend on our ability to provide scientifically sound and ethically sustainable interpretations, in highlighting the variety of techniques currently employed to unravel key aspects of Life. The 76th Congress will end with a Round Table primarily focusing on the public use of Protected Areas in Italy. This should provide the opportunity to discuss some of the highly debated topics on Nature Conservation and sustainable use of natural resources, allowing to evaluate pros and cons of the present nature/nurture relationship.

The possibility to compare new ideas on such topics as they freely emerge in the discussion constitutes an essential ingredient for encouraging interest, engagement and participation in the activity of our Society and for providing new guide lines for the disciplines of Zoology and Comparative Anatomy. Special attention has been given to young researchers. Of the 150 scientists attending this Congress, over 30% are PhD students or Research assistants. Among them, ten will be invited to present their work in the "9th UZI Awards for young Researchers" session, and four will receive the prize awarded. Recognition of these excellences is meant to be an incentive for strengthening their passion in Zoology and Comparative Anatomy and to encourage them to remain active in spite of present difficulties.

Given these premises, the annual Congress of our Society is not only an important platform for strengthening our collaborations, as usually, but also the scenario where new relationships and new developmental strategies could be planned and pursued. It is therefore with great pleasure and enthusiasm that we wish you all a fruitful and interesting stay at 76th National Congress of the Unione Zoologica Italiana.

Viterbo, September 15-18, 2015

Anna Maria Fausto
President of the Organizing Committee
76th National Congress
of the Unione Zoologica Italiana

ANTONIO ROLANDO, MATTEO NEGRO, ELEONORA OPERTI,
KATIA LEO, ELENA CERRUTI, ANGELA ROGGERO, ROBERTA BERRETTI,
GIORGIO VACCHIANO, RENZO MOTTA, CLAUDIA PALESTRINI

Department of Life Sciences and Systems Biology, Via Accademia Albertina 13, 10123 Torino, Italy

BIODIVERSITY AND FOREST MANAGEMENT: THE CASE OF BRACHYPTEROUS GROUND BEETLES OF SESSERA VALLEY BEECH FORESTS (NW ITALIAN ALPS)

European beech forests are of particular importance for biodiversity, although relatively little is known about how beech forest management impacts on invertebrate communities. We focused on a group of localized, medium and large-bodied brachypterous ground beetles inhabiting beech forests in the north western Italian Alps. The study site, located in the Sessera Valley, is part of Natura 2000 ecological network. In particular, the site houses *Carabus olympiae*, classified as a priority species in Annexes II and IV of the “Habitats Directive” (92/43/EEC). We used baited pitfall traps to sample the carabid community and investigate the influence of beech forest management history [i.e. over-mature coppices (OC) and coppices in conversion to high forests (CCHF)], climatic, topographic and microhabitat characteristics on ground beetle diversity, measured as total relative abundance, species richness, Shannon diversity and abundance of the endangered endemic species *Carabus olympiae*. Moreover, we used radiotelemetry to evaluate *C. olympiae* movements in differently managed beech forest stands. The diversity of forest specialist carabids was higher in OC and in forest stands characterized by a higher mean temperature and lower relative humidity. Moreover, we detected a positive response of several diversity variables to coarse wood debris cover or volume, herb cover, and the standard deviation of tree diameter. Currently, OC seems to be a more favorable habitat for forest carabids, including *C. olympiae*, although succession over time can lead to a progressive homogenization of the vegetation structure, with negative consequences for the conservation of the forest carabid assemblage. Preliminary observations on *C. olympiae* movements seem to suggest they move more linearly in recently coppiced stands. Based on our results, we suggest that the traditional management of beech coppice and its conversion to high forest should be modified by including practices aimed at promoting structural and microhabitat diversity such as retention of large trees, creation of canopy gaps, retention of coarse wood debris and the preservation of ‘islands’ of older trees in the managed stands. The research was supported by a European grant (EU LIFE+ Project NAT/IT000213).