

## Final remarks on the 39<sup>th</sup> Congress of the “Società Italiana di Biogeografia” (Rapallo, Genoa province, May 29-31, 2013)

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### EDITORIAL

The 39<sup>th</sup> Congress of the “Società Italiana di Biogeografia”, excellently organized in Rapallo (Genoa province) by DISTAV (“Dipartimento di Scienze della Terra, dell’Ambiente e della Vita”) of Genoa University, was attended by distinguished but frankly not so many participants. The number of participants was low, if compared with the high numbers of people registered in the S.I.B. Congresses held in the eighties and nineties of the last century.

But those, of course, were other times, when quite larger funds were available, the e-mail had not yet taken the place of letters and manually typed texts (or, for authors more up to date, with the electric typewriter), the web did not exist, not even cell phones, while databases were card indexes generally written by hand and the disastrous consequences of the adoption of the Impact Factor were long away to come.

The congresses constituted, therefore, besides an occasion to go deep into particular topics, also the opportunity to meet and to speak directly with colleagues sometimes only known by correspondence, in a stimulating and fruitful comparison of skills and specializations in geology, paleogeography, paleoclimatology, paleontology, botany and zoology, which have always been the main characteristic of S.I.B. Congresses.

It is now clear that the general situations of research and accessibility of information have changed profoundly; at the moment the portions of the national territory on which to devote specific attention are also nearly exhausted, so that for the foreseeable future a revision of the general lines of the themes to be developed in the congressional occasions will be almost mandatory.

That said, and going more properly to the analysis of what on the contrary has characterized this Congress, which probably has all the characteristics to be remembered as the last of those "old fashioned", the decision to put forward four several basic topics in as many sessions was, in my opinion, particularly appraisable.

In addition to the session devoted as usual to the host region (in this case "Alps-Apennines: vicariance or dispersion?"), the "Contribution to biogeography from databases and networks for monitoring of biodiversity" was treated, then the horizon was widened to the "Biogeography of the Mediterranean: dynamics and change" and finally with "Wallace, Wallacea... and the Ligurians" we wanted to commemorate the death centenary of him who is recognized as the biogeography father. As a general consideration on a personal level I have to acknowledge that all of the papers presented were interesting and provided a wide range of topics for discussion.

With regard to the topic of implementation and use of databases, the report of Carlo Jacomini and the communications of Stefano Martellos et al. and Mauro G. Mariotti et al. have made the point on the current Italian situation, with a review of the products already completed, those in making and those planned, with particular emphasis on managerial problems of no small importance, such as validation, ownership and total or partial accessibility of the data considered.

In comparison with many initiatives, sometimes well defined, sometimes a bit overlapping, the authors have underlined the need for a greater integration between existing networks, for a constant updating of the databases and for an adequate taxonomic competence from the data providers. But mostly the chronic lack of adequate and consistent funding was complained, whereas the millions of data present in the public collections (museums, universities, research institutes), if properly controlled and made available, should constitute an exceptional mirror of the biodiversity of our country. It was moreover underlined that the action of recording and insertion of the findings cannot proceed within restricted times (easy premise of approximations or inaccuracies) and involves however a not so small cost.

In the session dedicated to Alfred Russel Wallace, Valerio Sbordoni, taking inspiration mainly from morphology and chorology of the Lepidoptera Rhopalocera of Southeast Asia, has highlighted the extraordinary ability of a precursor demonstrated by Wallace in the analysis of phenomena and in the development of theories of absolute modernity, recalling the keenness with which the naturalist has explained the mimicry, the vicariance, the allopatric speciation or the very concept of species.

Federico Focher has then looked through the biography of Wallace, focusing on the most significant moments of his long life and, in particular, deepening his relationships with Charles Darwin and the contribution to what Darwin would later formalize as the theory on the origin of species and that Wallace himself baptized Darwinism, starting from the evidence of natural selection to come step by step, in the last period of his life, to the idea of an evolutionary-theistic cosmology.

Finally, I myself summarized the action of collecting and study carried out in the second half of the nineteenth century by the naturalists linked to the "Museo Civico di Storia Naturale" of Genoa, who explored the Wallacea and the surrounding territories, enriching the Genoese collections with an impressive quantity of zoological specimens of great value, many species new to science included.

The theme of the relationship between the Alps and the Apennines was preceded by the report of Robert J. Whittaker on the biogeography of conservation, focusing on the problems connected to the preservation of biodiversity and the estimated extinctions as a result of habitat loss and fragmentation.

Eight zoological and two botanical communications were included in this session. Among the latter, the first one (Silvia Poponessi et al.) pointed out the presence in the Ligurian territory of almost a third (415) of the 1156 Italian taxa of mosses and liverworts, while the second one (Luigi Minuto et al.) has placed emphasis on some recent floristic surveys carried out in the western part of the region (Maritime Alps, Ligurian Alps and neighbouring French areas); the same subject was then taken up by the French partners in the report of Jérémy Migliore et al. (inserted in the session on the Biogeography

of the Mediterranean), which was opened with an extended theoretical treatment of botanical-based phylogeography.

Examining the zoological contributions, one can observe that some of them were really and precisely linked to Congress topic, such as the communications by Omar Lodovici & Marco Valle - presented by the latter - on Trichoptera (presence in Liguria of 144 species on the 381 recorded for the whole of Italy), by Daniele Baroni et al. on Orthoptera, Mantodea and Phasmatodea (107 species out of 398) and by Dario Ottonello et al. - presented by Roberto Sindaco - on Odonata (51 species out of 93).

In other cases, the Congress was the occasion for inserting the Ligurian data in reviews at national level: among these ones we can quote e. g. the detailed zoogeographic analysis carried out by Marzio Zapparoli et al. on all the 160 species of Italian Chilopoda (71 of which are found in Liguria) or the survey on ichthyology of the Italian inland waters (communication of Pier Giorgio Bianco & Elizabeth Soto, presented by the first author).

In some other cases, the morphological and genetic analysis has been extended to large portions of the Palaearctic region, for example in the complex phylogeographic reconstructions of the populations of *Dolichopoda* (communication by Giuliana Allegrucci et al.) or of the *Erebia tyndarus* group (communication of Paolo Gratton et al., presented by Alessandra Trasatti). Finally, the attempt of biogeographic interpretation for the populations of Rotifers (communication of Diego Fontaneto) gave rise for additional observations.

Moving on to examine the posters, in one of them (by Loris Galli et al.), with a clear link to the Wallacean anniversary, the genera of Protura quoted for Oriental and Australian regions were biogeographically analysed, while different aspects of the Ligurian fauna were considered in three others. In particular Renata Manconi et al. listed the freshwater sponges (3 species out of the 7 known for Italy), Giacinta A. Stocchino et al. treated the freshwater Triclad (8 species, to which an allochthonous one must be added), and lastly Enrico Borgo & Giuliano Doria reported on the recent expansion in Liguria of the porcupine (*Hystrix cristata*), based on 63 new regional records.

As regards the Congress session devoted to the biogeographical interpretation of the Mediterranean colonization of some marine organisms, we have to mention the communications of Roberto Danovaro on deep-sea biogeography, of Marzia Bo and Giorgio Bavestrello on the Mediterranean Antipatharia (Black corals), of Giuseppe Notarbartolo di Sciara on the biogeographical aspects of the Mediterranean Cetacea, of Ernesto Azzurro on the changing Mediterranean fish diversity and of Barbara Cadeddu and colleagues on a checklist of cave-dwelling Porifera from the Ligurian Sea.

Some interesting posters were also presented and the session was closed by the relation by Carlo Nike Bianchi and colleagues devoted to a well documented analysis of the changing biogeography of the Mediterranean Sea, with particular emphasis on the ecological factors (tropicalization) that facilitate the arrival in our waters of new colonizers of tropical origin.

But I would like to conclude these few remarks by quoting the communication that opened the session devoted to the relationship between the Alps and the Apennines, viz. the interesting and updated synthesis of the Ligurian geology carried out by Francesco Faccini.

This contribution has highlighted, with a wealth of documentation, the marked geodiversity of the area, which, quite appropriately, was well connected to the local climate and in particular to the rainfall and to the flow of the streams, all with very steep courses and so possible harbingers of also striking flood events, whose tragic consequences were almost always enhanced by an uncontrolled urban development of the however limited floodplains. By now ascertained the existence of three successive orogenic cycles (Varisic, Alpine and Apennine), which affected our region, it must be noted

that the geotectonic interpretations proposed over the decades are not yet able to provide an univocal answer to the basic question of biogeographers: which is the real true boundary between the Alps and the Apennines. Depending on the hypotheses, and on the greater or lesser importance attributed to paleontological or petrographic data, it has been identified in the Colle di Cadibona, in the Sestri Ponente-Voltaggio line, in the Villarvernia-Varzi-Ottone-Levanto line, or in other positions. However, leaving aside the precise identification of this limit, an essential datum is confirmed, namely that the analysis of botanical and zoological populations highlights the simultaneous presence in the Ligurian territory of Alpine elements, obviously more abundant in the western sector of the region or even in the highest mountain massifs of the eastern sector, and Apennine elements, which see in the eastern portions of the area a more significant presence, becoming gradually rarefied moving towards the west. On the other hand, the situation of "hinge" of the Liguria has been well-known for a long time and surely it is not a case that in our region glacial relicts and frankly Mediterranean elements can be met in confined spaces and into a range of few kilometres, sometimes into a real mosaic.

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