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PIT Newsletter_1

All Taxa Biodiversity Inventory

Inventario Biologico Generalizzato
Inventaire Biologique Généralisé

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Note from the coordinators

Over four years, more than 2300 days of fieldwork were spent by about 300 expert taxonomists coming from all over Europe. These numbers well describe the tremendous effort applied for the realization of the All Taxa Biodiversity Inventory + Monitoring (ATBI+M), funded by the European Commission within the 6° Framework Programme.

Considering the great need for improving the knowledge of the biodiversity in the Marittime-Mercantour territory, in spite of the growing number of data on species, the two twin Alpi Marittime and Mercantour decided to continue the research activities supported by a new source of funding, the European Alcotra Programme 2007-2013.

As announced in EDIT's last newsletter at the end of the ATBI+M project (April 2011), since June 2010 the Parco Naturale Alpi Marittime and the Parc National du Mercantour have collaborated for the creation of an Integrated Transboundary Plan, in which the PIT-All Taxa Biodiversity Inventory was included. In addition to the enhancement of the species inventory in the Marittime-Mercantour territory (about 9.300 species have been identified so far), the ATBI intends to improve the knowledge of taxa and their ecosystems, and provide useful information on land management and conservation.



The studies will address the monitoring of parameters for the identification of impacts of human activities (on a global scale) and climate change (on a local scale).

Half of the project term is already over, and most of the activities have been set up and some are already drawing successfully to an end.

The active and fruitful collaboration among project partners brought excellent results both scientifically and didactically. Our hope is to reach, by the end of the project, valid and useful conclusions for the management of protected areas and to give a good example of a model of collaboration and applied scientific research organisation.

This newsletter, the first published within the PIT-All Taxa Biodiversity Inventory, intends to present the main changes made to the model suggested by EDIT with the ATBI+M 2007-2010 project, the results reached until now, and the future objectives.

As for EDIT's ATBI+M, the main challenge of the Inventory project will be to change how taxonomists and scientific institution interact with society to improve the impact of its activities. Therefore the Inventory project intends to draw the attention on the importance of scientific research in protected areas for the improvement of scientific knowledge and for the application of a better management system for habitats and species, in relation to international legislation and to guarantee sustainable touristic activities and economy.



Programma Alcotra 2007/2013
Programme Alcotra 2007/2013

Insieme oltre i confini
Ensemble par-delà
les frontières



Marta De Biaggi
Parco Naturale Alpi Marittime

Marie-France Leccia
Parc National du Mercantour

2011: the PIT takes the field



News from the Parc National du Mercantour

In total 55 researchers visited the Mercantour territory to carry out their fieldwork activities. The fieldwork season spanned from June to the end of September, in spite of July's bad weather conditions.

Together with the old research groups (surface water environments, mycoflora, lichens, soil invertebrates), many other experts have been working individually on groups of less known invertebrates (Chrysididae, Syrphidae...). The first data were included in the INPN (Inventaire National du Patrimoine Naturel) database, but most of the specimens are still under identification.

During the inventorying activities a very high number of data on fauna and flora were collected (more than 60.000 data up to now).

With the objective of understanding the functioning of four main ecosystems and for improving their management, we launched 3 requests for project proposals concerning the analysis of data on water ecosystems, forest ecosystems and agricultural ecosystems in the Mercantour. These projects will soon be effective.



O. Gargominy, Col Rousse (PNM)

The inventory of molluscs of Mercantour

The terrestrial and water molluscs of the Parc National du Mercantour are relatively well known, and have been studied at the beginning of the XX and XXI century (110 years in between the two research periods...). 119 species were catalogued, of which 111 are terrestrial, and represent the 20% of the French molluscs species! For 2011 the study effort was focussed on new technologies connected to *barcoding*, and thus to the sampling of live animals. Almost 500 specimens corresponding to about 80 taxa are being analysed.

The first results allowed us to confirm the validity of species status of Hélicon of Mercantour (*Chilostoma millieri*) with respect to the Hélicon of granites (*Chilostoma zonatum*), recently object of discussion.

Olivier Gargominy, MNHN

Important findings for biospeleology in Mercantour

The Biospeleology section of the PIT-ATBI was put into the hands of speleologists supported by the Comité Départemental de Spéléologie des Alpes-Maritimes (CDS 06) for the technical aspects, and by the Association Troglorites for the scientific aspects, and coordinated by Jean-Michel Lemaire and Jean Raffaldi.

The approach made possible the exploration of 30 caves in the Mercantour territory in 3 years, and allowed 20 new people to become involved in biospeleology.

It is still too early to make a final balance of the work because many specimens are yet to be identified by specialists, who are always very few compared to the material collected.

However we can point out that:

- almost 50 taxa, really carnivores and regular or accidental cave dwellers, were added to the inventory; among them, the most peculiar is the “wingless fly of the glaciers”, *Chionea (Sphaeconophilus) alpina* Bezzi, 1908, which finds refuge in alpine caves in the summer time, and had never been reported for the area before;
- a subspecies of cave dwelling beetle new to science was described and published: *Duvalius magdelainei tordjmani* Lemaire & Raffaldi, 2011 (Carabidae);
- a new species of curculionide (Coleoptera Curculionidae) was discovered in the heart of the Parc du Mercantour; its description will be published shortly under the name of *Trachyphloeus lecciae* Borovec;
- the distribution of several species highly localised has been defined: we can cite the carabid beetle *Duvalius sicardi* Fagniez, 1923, and the isopod *Buddelundiella zimmeri* Verhoeff, 1930, which was object of a publication (Lemaire, 2011).

Jean-Michel Lemaire, Association Troglorites



News from the Parco Naturale Alpi Marittime



After the first 6 months of project intently dedicated to the definition of the top priority issues and to contact the most qualified experts, 21 contracts were signed in 2011 with professionals and institution in relation to several topics of scientific and management interest.

Among the various topics, the projects concerned the study of the biodiversity of less known taxa in the Marittime-Mercantour territory (e.g. bryophytes, lichens, molluscs, arachnids...), the study of the impacts of human activities such as agronomical and touristic activities, and the planning of permanent monitoring strategies to verify the impacts of climate change on habitat and species in the protected areas.

Seventy expert researchers visited the Parco Alpi Marittime territory for a total of 552 days of fieldwork from April to the end of October; many of the studies have finished the field part, but we have to wait for the complete results and their elaborations because many species are still under identification and will lead to several scientific publications on new species for the area and for science!

Approaching a comprehensive inventory of arachnids

The world of arachnids of the Alpi Marittime is about to be unveiled! Marco Isaia (in the picture), researcher at the University of Turin, since 2007 thoroughly studies, together with his team, the arachnids of the Parco Alpi Marittime territory, in order to contribute to the inventory of biodiversity and to study the complexity of ecological interconnections in environments subject to human impacts (e.g. grazing of domestic animals).



F. Tomasinelli, PNAM

From the 54 species of spiders known for the Park before the ATBI we reached 260, while the knowledge on “minor” groups such as opiliones and pseudoscorpiones have drastically grown, with several new observations for the park area. We must cite the observation of a new species of palpigrada (a rare order of Arachnid), known until now only from a specimen found in the Roya Valley, France, in 1977. (image below).



Palpigrade *Eukoenenia bonadonai*, F. Tomasinelli, PNAM

A recent publication is also noteworthy and concerns the description of a new species of troglobite mite *Troglocheles lanai* (Zacharda et al. 2011); moreover we cite a monography published by the Museo Regionale di Scienze Naturali of Italian Western Alps (Isaia et al. 2011), reporting several data collected within the ATBI.

For the identification of minor arachnid groups, Isaia's team works in collaboration with taxonomists known nationally and internationally, such as Axel Schönhofer (University of Mainz,

Germany) for opiliones, Giulio Gardini (University of Genoa, Italy) for pseudoscorpiones and Erhard Christian (University of Wien, Austria) for Palpigrada.

As far as spiders are concerned, the team for the University of Turin is working on the description of 2 species new to science found in the Park territory: it seems that one of two species can be considered endemic for the Argentera massif and comes from a little known area of the park...

Marco Isaia, University of Turin

New studies on the Alpi Marittime flora

Within the framework of the PIT some studies were conducted concerning the ecology and the phylogeography of endemic and priority species of the Alpi Marittime flora, with the objective of highlighting possible conservation and management difficulties on the species themselves or on their habitats.



Section of a flower of *S. florulenta*, University of Genoa

The Dipartimento per lo Studio del Territorio e delle sue Risorse (DIPTERIS) of the Genoa University (Prof. L. Minuto) is working on *Saxifraga florulenta*, studying its reproductive biology, and the Istituto di Botanica Sistemática e Giardino Botanico of the University of Zurich (Dr. Elena Conti), is working on the phylogeography of this species in all its distribution area.

Phylogenetic studies are being developed at DIPTERIS also on *Viola argenteria* and *Silene cordifolia*, while prof. Janis Antonovics and Michael Hood from the Department of Biology, University of Virginia USA are studying the impact of the infection caused by the fungi *Mycrobotryum violaceum* (sensu lato) on the distribution of the fam. Caryophyllaceae.

From research to conservation

News from the Museo Regionale di Scienze Naturali of Turin

From April to October 2011 the staff of the Museo Regionale di Scienze Naturali (MRSN) of Turin worked in the Alpi Marittime territory studying the spiders, orthoptera, cixiidofauna and molluscs, and in particular carrying out fieldwork in xerothermic areas at high and medium altitudes, deciduous forests, alpine prairies, rocky slopes, high altitude lakes.



As far as orthoptera are concerned, the most interesting parts of PNAM are restricted to the “Special Natural Reserve *Juniperus phoenicea*” and to the path to the Lake Soprano della Sella both for the high number of species and for their biomass.

The malacology research was concentrated mainly on alpine lakes 1535 m a.s.l. and 2466 m a.s.l., never studied before. The most interesting lakes were the ones with a slimy bottom rich in organic substances as nourishment.

Regarding spiders, together with the inventorying activities, an ecological study was developed in collaboration with the Department of Animal and Human Biology (DBAU, University of Turin) in relation to forestry management of the ancient forest of Palanfrè (listed in Annex I of the Habitat Directive and classified as high altitude beech Medio-European subalpine beech woods with *Acer* and *Rumex arifolius*) with the aim of providing useful management techniques.

These studies, still on-going, will offer not only useful data for the inventory, but also interesting suggestions for the study of the proliferation of some species of orthoptera, which, as we know, may bring to negative consequences for local agricultural activities.



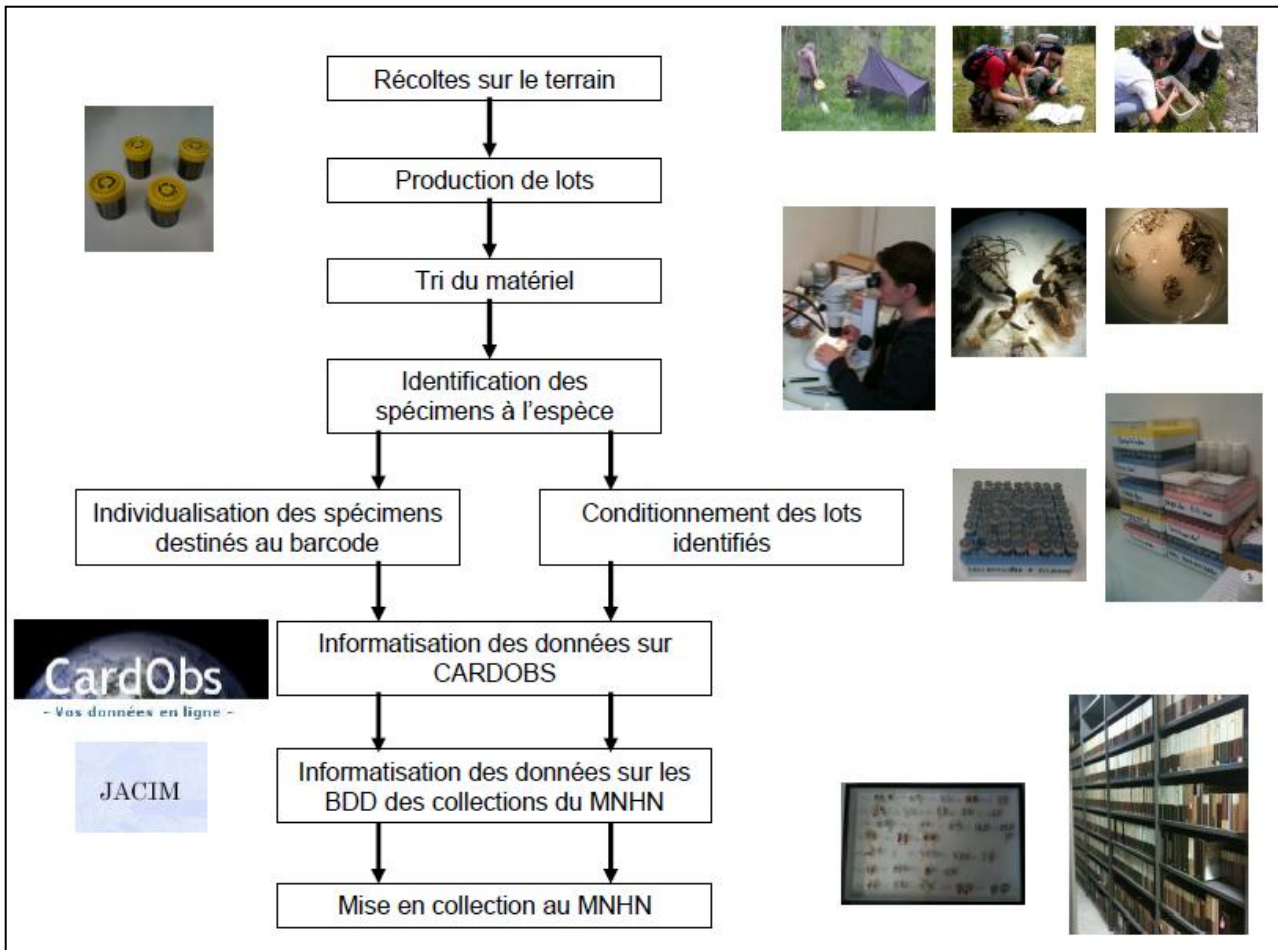
Alberto Chiarle, Federica La Pietra, Luca Picciau, MRSN

News from the Muséum National d'Histoire Naturelle of Paris



In 2011 started the most innovative aspects of the activities under the Muséum National d'Histoire Naturelle responsibility: the identification of the species and their inventorying using the *barcoding* technique. The data processing was summarised in a flowchart illustrated on page 6. On 2128 analysed samples, among molluscs, collembolan, hymenoptera and earth worms, 1111 were deposited in the MNHN collections and included in the database CARDOBS (INPN). For 1054 were made DNA extractions and sequencing, and the 287 of the sequences were published on BOLD (Barcode of Life Data System). 1017 are the samples now under analysis.

Julien Brisset, MNHN



Flow chart illustrating the process of sample analysis.

Lenses focussed on the Alpi Marittime and Mercantour!



The Parco Naturale Alpi Marittime and the Parc du Mercantour intend to continue the research activity on taxa not well known yet (both on a species level, and on a distribution level).

Expert taxonomists who intend to collaborate with us are welcome! Please contact the project coordinators for more information.

In the following list are mentioned our main groups of interest. Higher priority is given to the groups on which less data are available.

HIGH PRIORITY: diptera, hymenoptera, hemiptera, coleoptera (some groups), myriapoda, acari, procaryota, crustacea, tardigrada.

MEDIUM PRIORITY: dermaptera, microlepidoptera, orthoptera, coleoptera (some groups), myxomycota e altri fungi, odonata (PNM), arachnida, lichens, bryophytes, algae, aquatic invertebrates, mollusca (PNM).

LOW PRIORITY: flora, macrolepidoptera, vertebrates



Taxonomy in exhibition

After three months at the Museo Regionale di Scienze Naturali of Turin (MRSN), the photographic exhibition **Taxon: from Linnaeus to the Biodiversity Inventory of Alpi Marittime and Mercantour** was opened on July 9th 2011 at the Parco Alpi Marittime, ENEL L. Einaudi visitor's centre.

The exhibition will be hosted by other museums and institutions in the next months.

For more information on the events organised by the MRSN click on:

www.regione.piemonte.it/museoscienzenaturali/



Small and big researchers in action!

Laboratory of Biodiversity for young researchers

For the third year the Parco Naturale Alpi Marittime organised didactic activities for the primary schools of Valdieri and Entracque (CN), in order to allow the young students living in Valle Gesso to discover and study the characteristics of natural diversity typical of the Marittime Mercantour territory, learn the scientific method, analyse and communicate their experiences through the preparation of drawings, posters and IT programmes. This project, called "Biodiversity in Valle Gesso", was also the chance for the students to visit a museum, the Museo di Scienze Naturali of Turin, to take part in hikes in the mountains and to organise cultural exchanges with French schools.



PIT Summer School in Taxonomy

With the aim of continuing the tradition started in 2008 with EDIT in the Mercantour and Alpi Marittime parks, in 2011 were organised two Summer School in taxonomy dedicated to Master and PhD students, young researchers coming from all over Europe.

The first Summer School (5-12 June), entitled “**From Taxonomy to Bioindication: Studying terrestrial invertebrates to investigate natural and artificial processes**”, was held in English and was organised by the Parco Alpi Marittime in collaboration with the Museo Civico di Storia Naturale of Ferrara, which held courses in taxonomy for several years.

From 20th to 27th of August the Parc National du Mercantour organised a second Summer School in French, entitled: “**Approfondir sa connaissance sur la faune et la flore des milieux aquatiques**”.



In total 31 students coming from France, Italy, Romania, Germany, Mexico, Argentina and Bulgaria participated in the courses. They took part to theoretical and practical lessons held by teachers coming from all over Europe and expert in different field of taxonomy. The two courses were a success, both for the quality of the lessons, and for the many different activities in the field and in the lab that the students were offered, and which they actively participated in.



Photos: M. De Biaggi , PNAM e PNM

The success of these initiatives will bring to a third edition of the Summer School in taxonomy in 2012, organised by the Parco Alpi Marittime, the Museo of Ferrara and the Distributed European School of Taxonomy (DEST), an organisation established by EDIT and other international partners with the aim of transferring knowledge between current and future generations of taxonomists, also giving job opportunities.

This collaboration will bring a growing possibility to non Italian and French students to participate to the Summer School, and will increase its status at an international level.



The ATBI in Europe and the world

Since the beginning of the ATBI Maritime-Mercantour, more than 30 scientific articles were published by expert taxonomists involved in the inventory. There have also been many thesis by Master and PhD students who collected species and information on conservation and ecosystem conditions thanks to the support of specialists and professors involved in the ATBI.

Moreover, the park staff and researchers took part in several conferences presenting posters and oral communications. Among these we cite: XXV European Congress of Arachnology, Alexandroupolis, Greece, August 2009; XIX Congresso Società Italiana di Ecologia, Bolzano, September 2009; Joanneum, Fachgruppe Zoologie, Graz, dicembre 2009; Butterfly Conservation VI International Symposium, University of Reading, March 2010; ATBI Annual Conference, Tennessee USA, April 2011; Société Zoologique de France, France, September 2011 ; Colloque Séolane, France, September 2011).

Each year, since the beginning of the project in 1997, the ONG called Discover Life In America (DLIA) <http://www.dlia.org/> has been organising a conference with the aim of highlight the research, conservation and educational efforts made to understand, manage and restore the unique biological diversity of Great Smoky Mountains National Park and beyond.



Therefore, in response to growing interest in the national ATBI movement, the scope of the meeting has been broadened to include representatives from across the region, continent and world.

The Parc National du Mercantour and the Parco Naturale Alpi Marittime were invited to the conference to present their experiences in managing the ATBI, the first to be developed in Europe. It has been an interesting experience being able to compare different approaches in the organisation of the American and European ATBIs, and different ways of financing such initiatives for a long period of time.

For the future we are working at the realisation of an international collaboration agreement among ATBI which would improve the exchange of ideas and expertise in conducting these projects, on the on-going activities and on the conservation status of species and ecosystems.



In occasion of the ATBI Conference 2012 the Pulitzer prize winning author and Harvard professor Dr. E. O. Wilson will take part to the participate and be 2012 keynote speaker. For more information on how to participate do not hesitate to contact us.

Book-Box

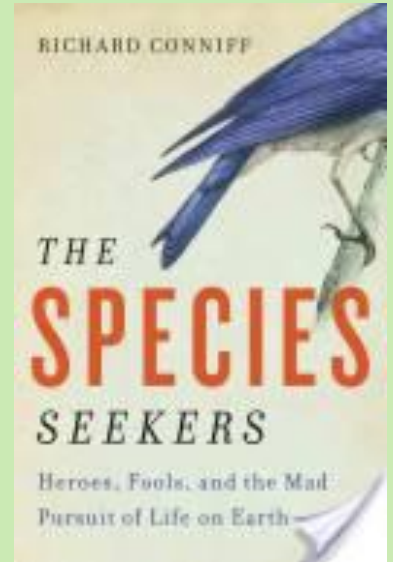
Two interesting books, published in 2011, might be an instructive and pleasant reading experience for taxonomists, ecologists and nature lovers...

Richard Conniff, 2011. *The Species Seekers – Heroes, Fools, and the Mad Pursuit of Life on Earth*. W.W. Norton & Company, Inc. New York-London.

“Acclaimed science writer Richard Conniff brings these daredevil *species seekers* to vivid life.” Several fascinating stories collected in 200 years of passionate research of the living world through oceans, dangerous forests and mountains, by more or less known characters who contributed together to the creation of the basis of modern biology, and tried to answer the big questions on the natural sciences.

From Linnaeus to Darwin, from Rafinesque to Say, from Peale to Waterton... botanists, entomologists, anatomists, geologists... professionals or passionate, altogether in an intricate story on their intuitions, travels, academic conflicts, enriched by 36 black-and-white illustrations.

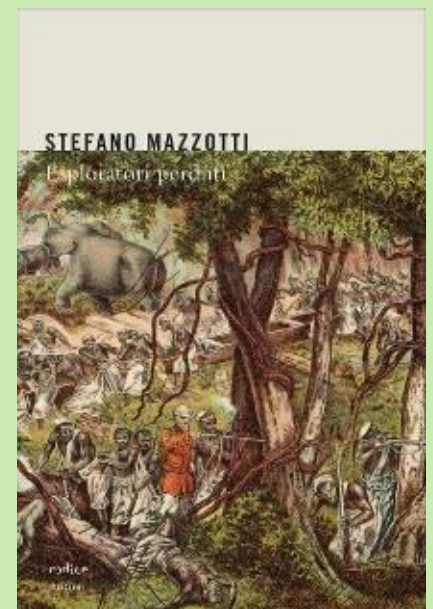
Alongside the species seekers' globe-spanning tales of adventure, Conniff recounts some of the most dramatic shifts in the history of human thought, introducing the readers to the pantheon of life on Earth, and their place within it.



Stefano Mazzotti, 2011. *Esploratori perduti. Storie dimenticate di naturalisti italiani di fine Ottocento*. Codice Edizioni.

Stefano Mazzotti, Zoology Curator at the Museo Civico di Storia Naturale in Ferrara (IT), presents in his book the stories of brave Italian scientists who, from the birth of the Italian State to the First World War, dedicated their lives to the study of biodiversity through the most savages and unexplored areas in the world (Africa horn, Borneo, Lapland, Amazonia, Alaska e Siberia).

The book was presented at the Museo di Scienze Naturali of Turin on December 6th 2011.



We recommend the following article:

17,000 Species in the Great Smoky Mountains. And Counting. A project to identify every living thing in the national park has a lot to show for its first decade of work. But where does it go from here?

By Jesse Fox Mayshark

www.metropulse.com/news/2011/nov/17000-species-great-smoky-mountains-and-counting/

List of publications - 2011

Follows the list of the publications released in 2011 concerning the activities carried out within the All Taxa Biodiversity Inventory project.

Billi F., Bourgon A., Cornet M., Desriaux P., George G., Iorio E., Rymarczyk F. & Varenne T. (2011). Insectes, myriapodes et arachnides des Alpes-Maritimes une faune riche, originale et vulnérable. Riviera Scientifique, centenaire, 101-120.

Bonsto L., Iorio E. et Minelli A. (2011). The centipede genus *Clinopodes* C. L. Koch, 1847. *Zoosystema*, 33(2).

Calabria, G., J. Máca, G. Bächli, L. Serra & M. Pascua (2011). First records of the potential pest species *Drosophila suzukii* (Diptera: Drosophilidae) in Europe. *Journal of Applied Entomology*, (in press).

Falasco E., Bona F. (2011). Diatom community biodiversity in an Alpine protected area: a study in the Maritime Alps Natural Park. *J. Limnol.*, 70(2): 11 pp.

Huemer P. (2011). Pseudo-endemism and cryptic diversity in Lepidoptera – case studies from the Alps and the Abruzzi. *Eco.mont*, Vol. 3, Nr. 1.

Huemer P., Hebert P.D.N. (2011). Cryptic diversity and phylogeography of high alpine *Sattleria*—a case study combining DNA barcodes and morphology (Lepidoptera: Gelechiidae). *Zootaxa* 2981: 1–22.

Isaia M., Lana E., Paschetta M., Pantini P., Schönhofer A.L., Christian E., Badino G. (2011). Aracnidi sotterranei delle Alpi Occidentali italiane (Arachnida: Araneae, Opiliones, Palpigradi, Pseudoscorpiones)/ Subterranean Arachnids of the Western Italian Alps (Arachnida: Araneae, Opiliones, Palpigradi, Pseudoscorpiones). *Monografie Del Museo Regionale Di Scienze Naturali di Torino*, XLVII. 325 pp.

Lemaire J.-M. (2011). Nouvelles données sur la répartition du cloporte *Buddelundiella zimmeri* Verhoeff, 1930 (Crustacea, Isopoda, Oniscidea, Trichoniscidae). *Biocosme Mésogéen*, 28(2).

Lemaire J.-M. & Raffaldi J. (2011). Un nouveau carabique cavernicole (Coleoptera, Carabidae, Trechinae) de la Haute-Tinée (Alpes-Maritimes, France) *Duvalius magdelainei tordjmani* n.ssp. *Biocosme Mésogéen*, 28(1).

Lemaire J.-M. & Raffaldi J. (2011). À propos de la répartition en France de *Sphodropsis ghiliani* Schaum, 1858 (Coleoptera Carabidae Sphodrini). *L'Entomologiste*, tome 67, n° 3 : 121 – 124.

Nel J. & T. Varenne (2011). *Klimeschiopsis maritimaealpina* n.sp. (Lep. Gelechiidae, Gnorimoschemini). *Oreina*, num.12.

Neumann V., Komposch C., Schnitter, P., Kahlen M. (2011). Records of Strinati's Cave Salamander *Speleomantes strinatii* (Aellen, 1958) in the Mercantour National Park, France and Alpi Marittime National Park, Italy.

Schmid-Egger, C. (2011). Hymenoptera Aculeata from “Parc national du Mercantour” (France) and “Parco delle Alpi Marittime” (Italy) in the southwestern Alps. *Ampulex* 1: 13-50. Staniczek, A.H. (2011). Aquatic insects. In: Bouchet, P., Le Guyader, H. & Pascal O. (eds). *The Natural History of Santo. - Patrimoines Naturels* 60 (in press).

Tautel C. (2011). *Glacies bentelii* (Ratzer, 1890), espèce mal connue ; sa présence en France et éléments de détermination du genre *Glacies* (Lep. Geometridae Ennominae). *Oreina*, num.14.

Tschorsnig, H.P. (2011). A new species of *Istocheta Rondani* (Diptera: Tachinidae) from the Mercantour National Park, France. *Stuttgarter Beiträge zur Naturkunde A, Neue Serie* 4, 335-340.

Zacharda M., Isaia M., Piva E. (2011). New troglobitic species of the genus *Troglocheles* (Acari: Prostigmata: Rhagidiidae) from caves in the northern Italy and Austria, with a key to adult species of the genus. *Journal of Natural History*, 45: 641-666.



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For more information on EDIT and the ATBI+M project

<http://www.e-taxonomy.eu>

<http://wp7.e-taxonomy.eu>



Partner di progetto
Partenaires du projet



Cofinanziatori di progetto
Cofinanciers du projet



Attuatori di progetto
Porteurs de projets

