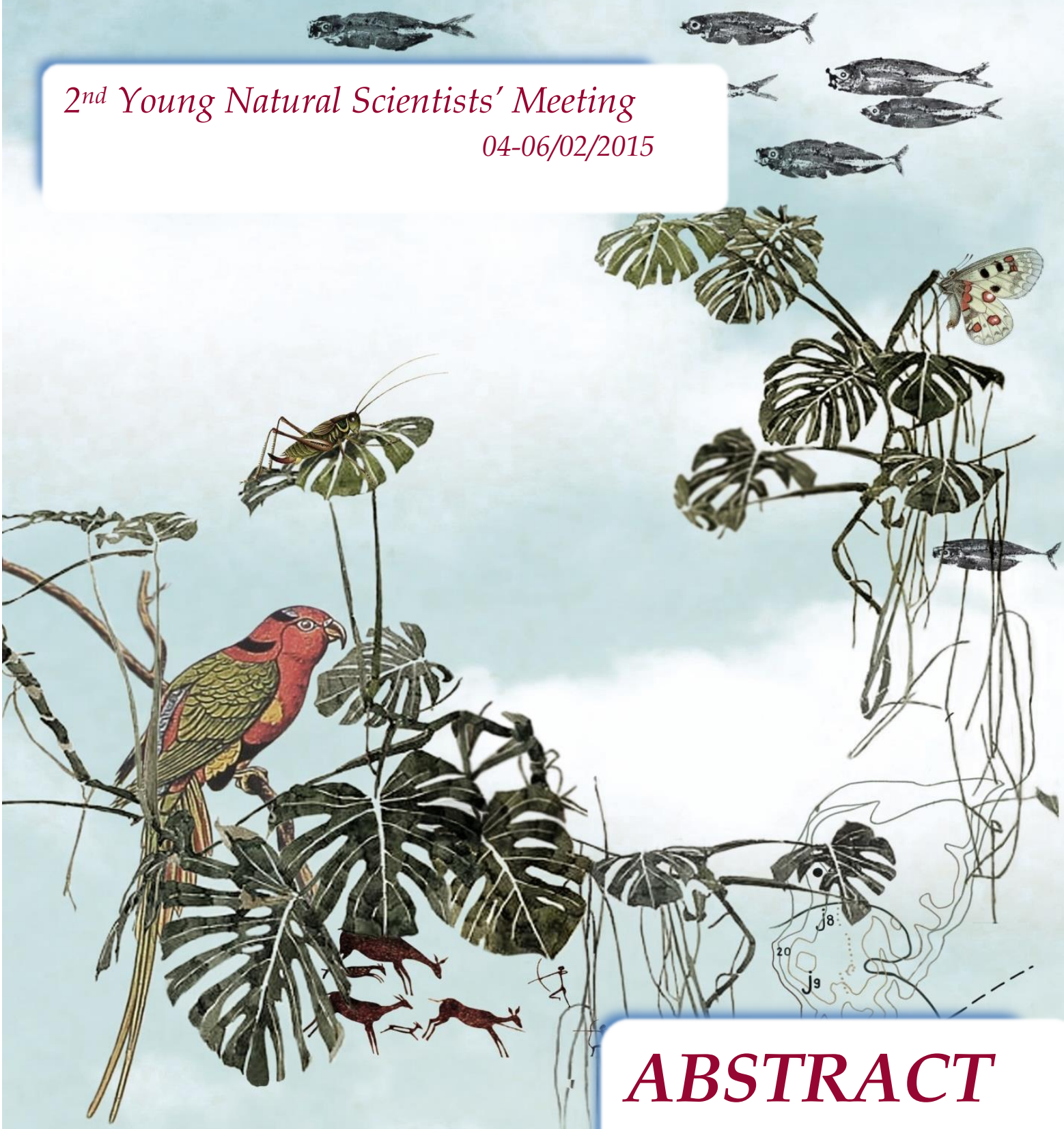
2nd Young Natural Scientists' Meeting

04-06/02/2015



ABSTRACT BOOK

GRAPHISME : SOPHIE FERNANDEZ

The BDEM (Bureau des Etudiants et Doctorants du Muséum), Doc'up and Timarcha are pleased to welcome you to the **2nd Young Natural History scientists' Meeting** at the Muséum national d'Histoire naturelle, in Paris. We hope this congress for young researchers will provide you the opportunity to present, possibly for the first time, your research in a relaxed but studious atmosphere. We believe that the YNHM is a great chance for us to have a first congress experience.

Our program is varied, covering several aspects of Natural History with a keynote speaker for each session and several oral and poster presentations by young researchers, distributed in four sessions. We thank you for coming so numerous and hope you will enjoy the conference and get opportunities for networking.

Faithfully yours,
The Organizing Committee:

Monica ARIAS (MNHN)
Baraut LAMBERT (MNHN)
Lucie BAURET (MNHN)
Alison BESSE (MNHN)
Corentin BOCHATON (MNHN)
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Jérémy TISSIER (MNHN)
Marc TESTÉ (MNHN)
Marine VALLET (MNHN)

Acknowledgements

We would like to thank the **Chairpersons and Jury members** for kindly accepting our invitation to present their session as well as lead the discussion and designating the winners for the oral and poster awards.

Session	Chairperson	Jury
Biodiversity, dynamics and conservation	Laurent Palka (MNHN)	Nathalie Machon (MNHN) Cedric Hubas (MNHN) Christie Lecoeur (MNHN)
Earth and planetary sciences	Emmanuel Jacquet (MNHN)	Grégoire Egoroff (MNHN) Pierre Guerriau (IPANEMA)
Mankind, prehistory, nature and societies	Jean Denis Vigne (MNHN)	Aurélie Salavert (MNHN) Florence Revelin (MNHN)
Systematics, evolution and comparative anatomy	Mario de Pinna (MZUSP)	Romain Natier (MNHN) Damien Germain (MNHN)

We also wish to thank for their financial and logistic support:

→our **sponsors and hosting institutions**:

→the **organizing associations**:

breed ducks (*Anas platyrhynchos*) during 50 days, under four conditions: 1/limited moving area, 2/normal area (control), 3/large area and stimulation for walking, 4/large area, swimming pool and stimulation for swimming. The areas were filmed all day long in order to quantify the exercise done by the ducks during their life. Five birds of each condition were sampled at 7 stages during the period. All the birds sampled run in special track and filmed to detect the maximum speed. The muscles of the hindlimb will be measured (length +weight +fiber length) and the bone shape and structure will be compared using µctscans. The comparison between the 50 old ducks muscles will be presented here.

Locomotion and bony labyrinth morphology in hominoids

Le Maître Anne[1], Brunet Michel[1,2], Vignaud Patrick[1]
1. Institut de Paléoprimatologie, Paléontologie Humaine : Evolution et Paléoenvironnements (France),
2. Collège de France (France)

The labyrinth comprises two functional parts. The cochlea detects sounds whereas the vestibular system is essential to keep balance and stabilize gaze during locomotion. Thus, semicircular canals and otolithic organs detect rotational and linear accelerations respectively. Perception sharpness, hence adaptation to a specific locomotion pattern, depends on canal morphology. In this study, a reference setting is established on five extant hominoid species. The bony labyrinth is virtually extracted from CT-scans. Comparisons are realized by geometric morphometrics. Interspecific and intraspecific shape variations are quantified. The relative contributions of locomotion, phylogeny and allometry in the signal are estimated. The aim is to use this reference framework for comparisons with fossil hominids, in order to precise their phylogenetic position and locomotion pattern.

Effectiveness of COI sequence variation in detecting genetic structuring in *Engraulis encrasicolus* (Linnaeus, 1758) of the Mediterranean Sea.

Pappalardo Anna Maria, Ferrito Venera
University of Catania (Italy)

The degree of genetic population structure of *Engraulis encrasicolus* has been studied in the last twenty years based on the analysis of different molecular markers. In the Atlantic Ocean and the Mediterranean basin, most of the authors supported the presence of two co-occurring lineages with different proportions in each population, resolved with different class of molecular markers (mtDNA, microsatellites, SNP, nuclear intron) (Magoulas et al., 1996; 2006; Borsa et al., 2004; Grant, 1985; Zarraonaindia et al., 2012, Vinas et al., 2014, Karahan et al., 2014). In this work the sequence variation of 655 bp of Cytochrome Oxidase I (COI) mitochondrial gene in 74 adult individuals collected from 2012 to 2013 from Tyrrhenian, Sicilian Channel and Ionian Sea, around Sicily, and from Adriatic Sea has been used for the first time to detect the genetic structure of *E. encrasicolus*. The sequences of the hyper-variable fragment of the mitochondrial control region (CR) were also used to validate the efficacy of COI as a population marker. Both Maximum Likelihood tree and Median Joining Network based on COI and CR haplotypes, showed the clear splitting of the sequences in two lineages including sample from all populations. There was a strong agreement between both markers in the assignment of the same specimen to the same lineage with the exception of 17% of the samples in which CR and COI sequences of the same specimen belonged to different lineages. Data from literature indicate that these two lineages correspond to two morphologically differentiated entities, one coastal corresponding to the so-called "white anchovies" , described as a separate species, *E. albidus*, and a more offshore one, corresponding to the "blue anchovy" both occurring also simpatrically. In this context, COI sequence variation could result a useful molecular tool to solve the complex status of the European anchovy.

A new large basal sauropodomorph from the early Jurassic upper Elliot formation of Lesotho

Peyre De Fabrègues Claire[1], Allain Ronan[1], Battail Bernard[1], Falconnet Jocelyn[1], Nyabela Pusetso[2]
1. Département Histoire de la Terre, CR2P (France),
2. Morija Museum and Archives (Lesotho)

Recent fieldwork in the Upper Elliot Formation exposed near the village of Ha Noosi in the Qacha's Nek District in Lesotho has yielded the sub-complete and articulated skeleton of a new basal sauropodomorph. The only missing elements are the caudal vertebrae, most of the pelvic girdle and the distal part of the right hindlimb. An isolated femur of another individual and two partial disarticulated skeletons of the small *Massospondylus carinatus* have been found associated with this new specimen. Ha Noosi locality is also known to have yielded the type specimen of the heterodontosaurid *Abrictosaurus consors*. A detailed analysis of the skull combined with the large dimensions of the skeleton is sufficient to assume that we describe here a new species. The taxon displays the most elongated and dorsoventrally compressed skull known among basal sauropodomorphs from the Late Triassic and Early Jurassic. It can be distinguished from the other sauropodomorph genera of the Upper Elliot Formation based on several autapomorphies, including a bifid anterior process of the