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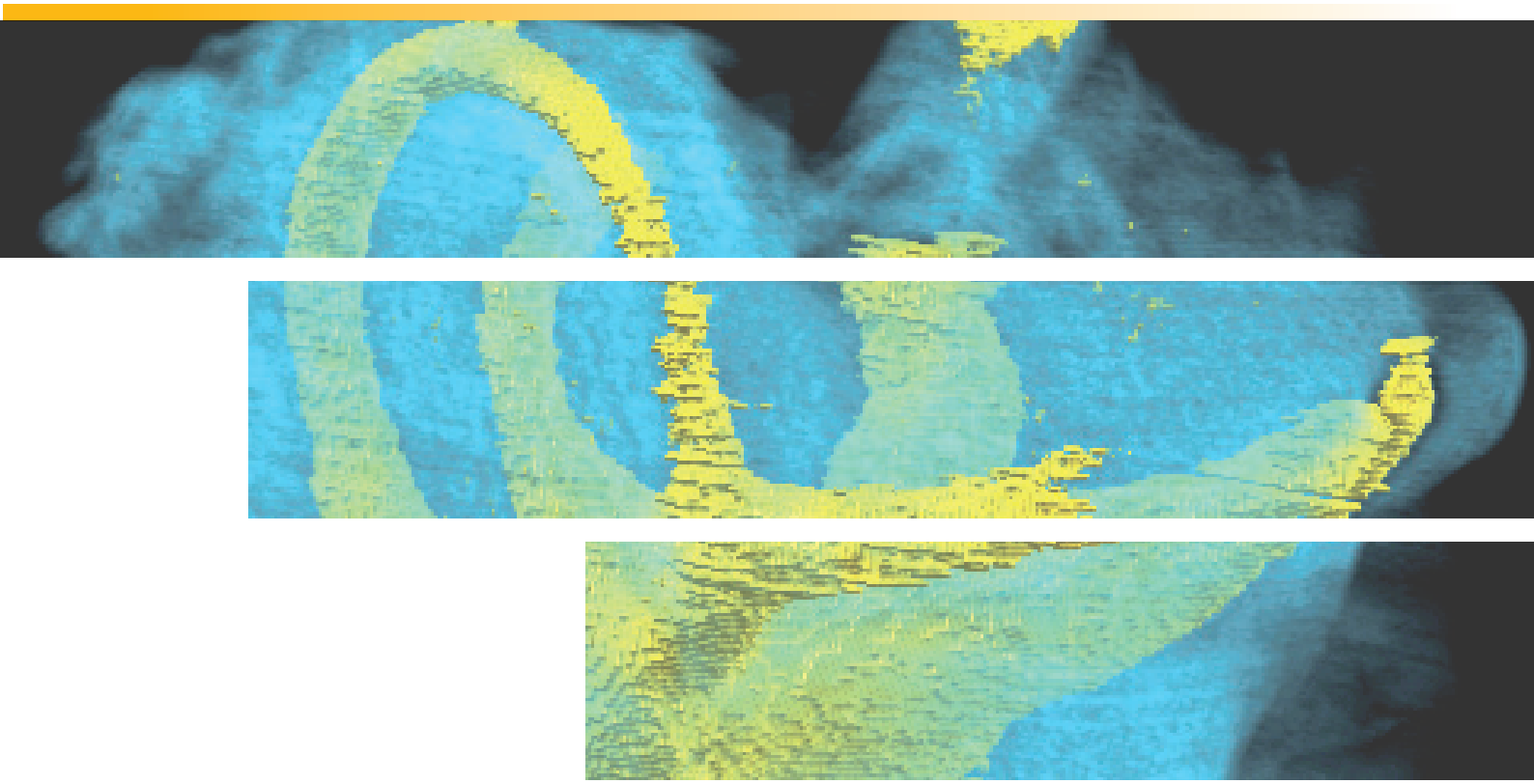

Annual Report 2010

Institut Català de Paleontologia Miquel Crusafont

ICP

Institut Català de Paleontologia
Miquel Crusafont

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Welcome to ICP

Salvador Moyà-Solà
Director

The Institut Català de Paleontologia Miquel Crusafont (ICP) is a private foundation created in November 2006, supported by the Generalitat de Catalunya and the Universitat Autònoma de Barcelona (UAB).

With headquarters both the UAB and in Sabadell, the ICP focuses its research on the rich palaeontological heritage of Catalonia, as well as in projects, from further afield, of special significance and scientific interest. It is structured in five research groups: Mesozoic Faunas, Neogene and Quaternary Faunas, Palaeoprimatology and Human Palaeontology, Palaeobiology, and Virtual Palaeontology. The last of these groups is based on new technologies (high-resolution computed tomography), and cross-cuts the other four.

The Institute relies on the support of a Scientific Advisory Board, nominated by the Board of Trustees, formed by prestigious scientists from the field of palaeontology and which acts as an advisory body.

From its beginnings, the ICP has clearly understood that, in addition to studying the origin of fossils throughout geological time, it is necessary to promote multidisciplinary palaeontological research, as well as conservation and expansion of the palaeontology collections in Catalonia, without neglecting the continual training of its own researchers and the communication of palaeontology to the general public. All in all, the ICP is a research centre with an unequalled human and cultural side.

A new name

From 2006 until the end of 2010, the centre was known as the Institut Català de Paleontologia (ICP). Since November 2010, the ICP has incorporated the name of Miquel Crusafont, the distinguished palaeontologist from Sabadell who founded the Institut Provincial de Paleontologia in Sabadell, in 1969. This reinforces the link between our institute and this great palaeontologist, one of the most important in both the Catalan and the international palaeontology of the 20th Century.

New Espai Miquel Crusafont

In 2010, to coincide with the Any Crusafont (the Crusafont Year), the ICP fulfilled its desire for growth with the opening of the new Espai Miquel Crusafont, which has undergone a complete transformation. Specifically, visitors can enjoy a new exhibition offering a contemporary display suitable for all audiences. Located in Sabadell, the Espai houses one of the most important collections of vertebrate fossils in the Iberian Peninsula, with nearly 200,000 specimens of vertebrates that lived between 240 million and 10,000 years ago.

The Espai Miquel Crusafont brings together research by investigators at the ICP and combines it with excellent knowledge transfer to society. This has led to an overwhelming reception by the general public.

Future

Training and recruitment of researchers by the ICP remains crucial to the progress of the centre. Indeed, in 2010 the Institute experienced a growth in scientific quality and production considerably higher than that of previous years, all thanks to the incorporation of new scientific staff, from young people preparing their Masters or doctoral theses, to renowned researchers from around the world.

For this reason, we are convinced that the ICP must continue to grow. This is the only guarantee to remaining a centre of reference beyond our own borders, while at the same time intensifying the scientific and cultural wealth of our country. Additionally, deep in the current financial crisis that Europe is experiencing, we firmly believe that research is a safe way to boost the long-term social and economic development of the country. Consequently, financing and investment by governments into science and research cannot decrease.

Four years after the birth of the ICP, we would like to show our appreciation to our board of trustees, thanks to whom we are able to continue with our research and keep at the forefront in the field of palaeontology. To Generalitat de Catalunya and Universitat Autònoma de Barcelona:

THANK YOU!

Organizational chart

BOARD OF TRUSTEES

SCIENTIFIC ADVISORY BOARD

DELEGATE COMMITTEE

DIRECTION

MANAGEMENT

RESEARCH DIRECTION

RESEARCH SUPPORT

ESPAI MIQUEL CRUSAFONT

RESEARCH

DIRECTION

Salvador Moyà-Solà
Director
ICREA Research Professor

R.Maria Pérez i Pereira
ICP Publications
and Assistant Director

MANAGEMENT

Enric Menéndez
Manager

Gretell García
Àngels Huertos
Administration

RESEARCH DIRECTION

Salvador Moyà-Solà
Research Director
ICREA Research Professor

ESPAI MIQUEL CRUSAFONT

Laura Celià
Coordinator

Archives and Documentation

Teresa Esquirol
Head of department

Teresa Requena
Archivist and
Documentalist

Collections Management

Laura Celià
Head of department

Marta March
Collections management
technician

Xavier Oller
Collaborator

Educational and Dissemination Activities

Jordi Balaguer
Head of department

Mònica Cucurella
Maria Pereira
Reception and shop

RESEARCH SUPPORT

Fieldwork and Maintenance

Manel Llenas
Manel Méndez
Technicians

Preparation and conservation

Sandra Val
Head of department

Xènia Aymerich
Carolina Cancelo
Nuria Guerrero
Domingo López
Marina Rull
Marta Valls
Preparators /
Curators

Paleontological depository and Outcrops

Jordi Galindo
Head of department

Communication and Scientific Dissemination

Sílvia Bravo
Head of department

Xènia Castellà
Communication
Apprentice

Projects

Laila Pilgren
Head of department

RESEARCH

Mesozoic Faunas

Àngel Galobart
Head of group

Fabio Dalla Vecchia
Nikolaus Malchus
Researchers

Josep Marmi
Bernat Vila
Postdocs

Arnau Bolet
Josep Fortuny
Albert Garcia
Marco Petrozzelli
Joan Cartanyà
Predocs

Novella Razzolini
Alba Vicente
Collaborators

Neogene and Quaternary Faunas

Salvador Moyà-Solà
Head of group
ICREA Research Professor

Jan Van-Dam
Antonio Sánchez
Researchers

Isaac Casanovas
Marc Furió
Daniel DeMiguel
Joan Madurell
Postdocs

Josep Aurell
Àngel Luján
Sílvia Pineda
Guillem Pons
Josep M.Robles
Cheyenn Rotgers
Collaborators

Palaeoprimatology and Human Palaeontology

Salvador Moyà-Solà
Head of group
ICREA Research Professor

Raef Minwer-Barakat
David M. Alba
Sergio Almécija
Postdocs

Judit Marigó
Miriam Pérez de los Ríos
Marta Pina
Imma Roig
Predocs

Marta Palmero
Scientific illustrator

Ivette Susanna
Collaborator

Palaeobiology

Meike Köhler
Head of group
ICREA Research Professor

Gabriele Macho
Researcher

Xavier Jordana
Soledad de Esteban
Postdocs

Nekane Marín
Predoc

Laura Fernández
Rubén García
Laboratory technicians

Virtual Palaeontology

Josep Fortuny
Coordinator

Scientific Advisory Board

Prof.
Jaume Truyols Santonja
Departamento de Paleontología
Universidad de Oviedo
SPAIN

Prof.
Michel Brunet
Directeur UMR CNRS 6046
Laboratoire de Géobiologie, Biochronologie et Paléontologie Humaine
Université de Poitiers
FRANCE

Prof.
Nieves López Martínez
Departamento de Paleontología
Universidad Complutense
de Madrid
SPAIN

Prof.
Brian McNab
Florida State University
USA

Prof.
David Pilbeam
Henry Ford II Professor of the Social
Sciences Curator of Paleoanthropology
Peabody Museum
Harvard University
USA

Prof.
Lorenzo Rook
Dipartimento di Scienze della Terra
Università di Firenze
ITALY

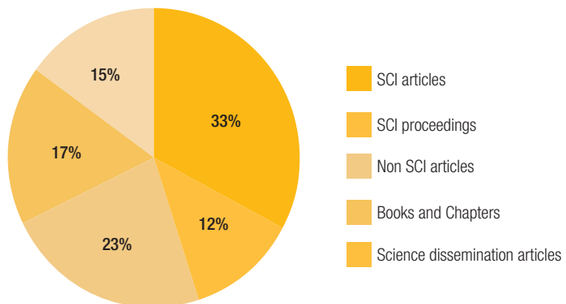
Prof.
José Luis Sanz
Departamento de Paleontología
Universidad Autónoma de Madrid
SPAIN

Prof.
Elisabeth Vrba
Dep. of Geology and Geophysics
Yale University
USA

Activity Summary

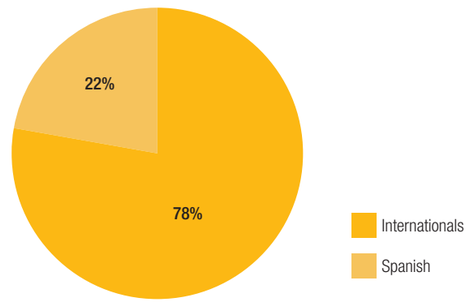
Scientific Production

Publications



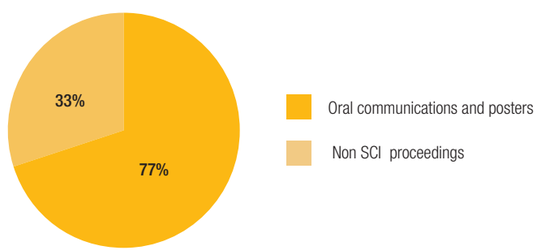
SCI articles	34
SCI proceedings	12
Non SCI articles	23
Books and Chapters	17
Dissemination articles	16

Conference participation



Internationals Conferences	14
Spanish Conferences	4

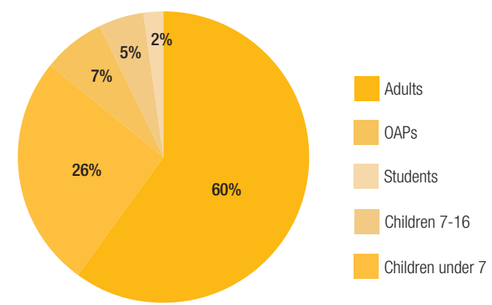
Type of Conference participation



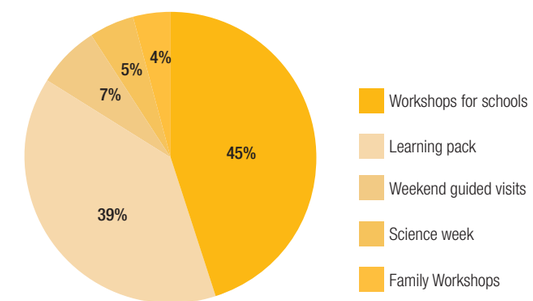
Non SCI proceedings	11
Oral communications and posters	36

Espai Miquel Crusafont

Visitors of Espai Miquel Crusafont

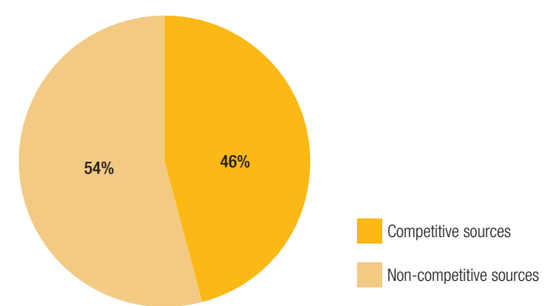


Activities in the Espai Miquel Crusafont



ICP budget

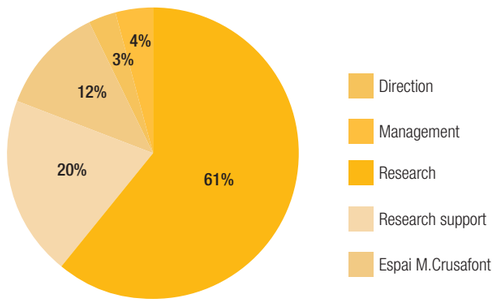
Funding sources



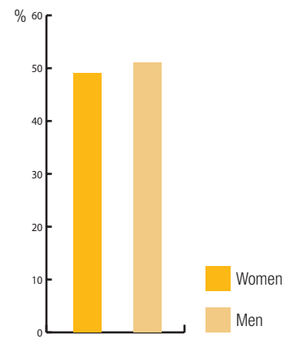
Funding sources	Public funds	Private funds
Competitive	694,122.43€	106,906.53€
Non-competitive	930,199.19€	

ICP staff

ICP staff distribution



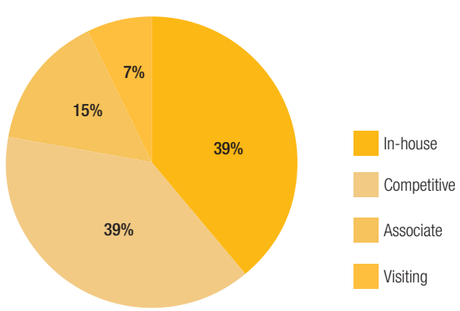
Gender distribution



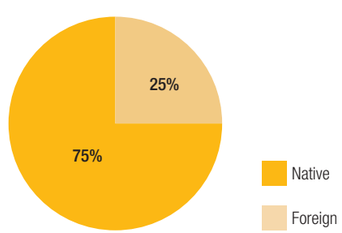
ICP staff	Women	Men
Direction	1	1
Management	2	1
Research	15	26
Research Support	9	4
Espai Miquel Crusafont	6	2

Researchers

Profile



Origin



The Crusafont Year

October 3rd, 2010, marks one hundred years since the birth of Miquel Crusafont i Pairó from Sabadell, one of the most important paleontologists of the 20th century. To commemorate this date, the ICP has coordinated a year full of events in memory of Dr. Crusafont.

In order to bring together all the scientific, social and cultural institutions with which Miquel Crusafont had contact during his life, the Commission of the Crusafont Year has been created, comprised by:

- ***Sabadell City Council***
- ***Sabadell Historical Archive***
- ***The Centre for the History of Science (UAB)***
- ***The Centre for Educational Resources***
- ***Cineclub Sabadell***
- ***The Comissió Ciutadana***
- ***Barcelona Provincial Council***
- ***The Bosch i Cardellach Foundation***
- ***The Miquel Crusafont i Pairó Secondary School***
- ***The Catalan Institution of Natural History (IEC)***
- ***The Institut Català de Paleontologia Miquel Crusafont***
- ***Sabadell History Museum***
- ***The Science Archive Service***
- ***The Catalan Society for the History of Science and Technology***
- ***The Sabadell Hiking Union (Unió Excursionista de Sabadell)***
- ***The Universitat Autònoma de Barcelona***
- ***The Universitat de Barcelona***

The Crusafont Year, which began on October 3rd, 2010, and which runs until October 8th, 2011, involves a whole series of activities designed to increase public awareness of this palaeontologist. Each event is organised by one or more of the commission members, with the intention of reaching as many members of the public as possible.

In 2010, the following events took place:

Start of the academic year 2010-2011 and presentation of the Sabadell town hall's City and School Project (September 16th).

Around 120 teachers from Sabadell and Sant Quirze del Vallès attended this event which revolved around the figure of Dr. Miquel Crusafont. The address "When classrooms awaken vocations. The example of Miquel Crusafont i Pairó" was given by Laura Celià.

Inauguration of the Crusafont Year.

On October 2nd, the Crusafont year officially began with the inauguration of and open day at the new Espai Miquel Crusafont. The start of the Crusafont Year was celebrated in the Principal Theatre in Sabadell and included speeches by Salvador Moyà-Solà, director of the ICP; Lluís Monge, culture councillor for Sabadell Town Hall; Manuel Bustos, mayor of Sabadell and Ramon Ten, representing the Bosch i Cardellach Foundation. There was also participation by students from the IES Miquel Crusafont School, the soprano Montserrat Torroella and the pianist Joan Manau.

Name change of the Institute.

One of the principal demands of the commission was that the ICP once again included the name of Miquel Crusafont. On November 8th, 2010, the trust of the Institute approved this modification, meaning that, once all administrative technicalities have been navigated, the ICP will be the Institut Català de Paleontologia Miquel Crusafont.

Science Week.

Within the framework of Science Week a seminar was given, addressed to the secondary school students from IES Miquel Crusafont, which culminated with a visit to the new Espai Miquel Crusafont in order to raise awareness of the legacy we currently have from this distinguished scientist.

Direction and Management

Salvador Moyà-Solà
Director

Enric Menéndez
Manager

R.Maria Pérez i Pereira
Publications and Assistant director

Gretell García
Àngels Huertos
Administration

The ICP is divided into Direction and Management and three different areas: Research, Research Support and the Espai Miquel Crusafont.

The **Direction** of the ICP guide the strategy of the centre directing and organising all of the research activity. To this end, the director is supported by the **Management department** which, plans and guides the staff and resources revolving around the research.

The Management department of the ICP is responsible for the planning and coordination of financial policies and both internal (staff) and external (public agency and institution) proposals. The purpose of this department is to programme the cash needs of the centre in advance and find the most appropriate source of funding for each specific project.

The area of **Research** reports directly to the director of the ICP and is divided into five research groups made up of researchers, interns and collaborators working in an interdisciplinary team. Participation in projects and the joint publication of papers are the main driving forces promoting high-quality international research.

The technical staff of the ICP reports directly to the manager and are grouped by departments, falling into the areas of **Research Support** and the **Espai Miquel Crusafont** (in Sabadell). The latter comprises the museum space, the ICP Collections and the Archive. The Espai Miquel Crusafont has had, from its beginnings, the mission to bring science and the research process to the general public. For this reason, there is a focus on communicative and educational activities and exhibitions aimed at children, students, adults and older people, with the aim of letting them participate in the scientific world and awakening an interest in research and culture.

Investment 2010

- *FEDER funding for the for rehabilitation and reconstruction of the Miquel Crusafont building in Sabadell: 920,142.35*
- *FEDER funding for scientific equipment: 182,735.15 €*
- *Investment of own funds: 61,530.25€*

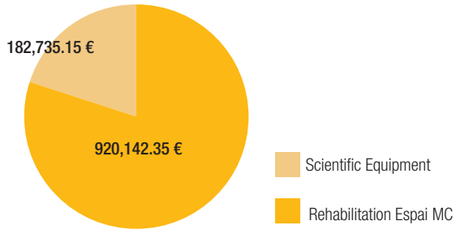
Total 1,164,407.75 €

Application for FEDER FUNDS 2007-2013 made in 2010

Scientific equipment: 182,735.15 €.

Rehabilitation of the Miquel Crusafont museum area: 920,142.35 €.

FEDER Funds



The deadline for the project to carry out renovation work is December 2013.

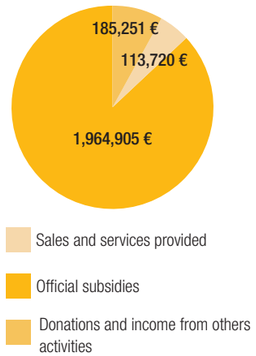
The total resources obtained for the FEDER project are 5,838,000 Euros, of which 1.2 million Euros are earmarked for the rehabilitation of the Espai Miquel Crusafont in Sabadell; 938,000 Euros for the purchase of scientific equipment and 3.7 million Euros for the construction of a new building in the UAB campus, in Bellaterra (Barcelona).

The latter project, with a total cost of 3.7 million Euros, was financed by the extension of a FEDER Project of 2,578,000 Euros and an extraordinary contribution from the Generalitat de Catalunya, the remainder coming from the ICP's own resources.

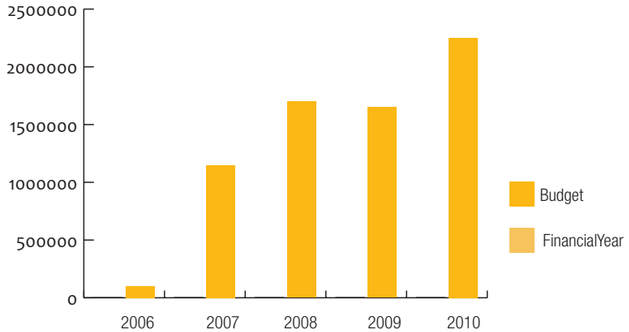
With the creation of the new facilities, the ICP will have two sites to cover the needs of the following areas: laboratory, research, collections, exhibitions and storage.

- Financing of activities undertaken by the Institut Català de Paleontologia Miquel Crusafont during 2010
- Evolution of the ICP funding budget

Funding



Evolution of ICP funding budget



Research

Research Group of Mesozoic Faunas

Àngel Galobart
Head of group

Fabio Dalla Vecchia
Nikolaus Malchus
Researchers

Josep Marmi
Bernat Vila
Postdocs

Arnau Bolet
Josep Fortuny
Albert Garcia
Marco Petrozzelli
Joan Cartanyà
Predocs

Novella Razzolini
Alba Vicente
Collaborators

The Research Group of Mesozoic Faunas studies the fauna and flora of the period of the Earth's history which began approximately 251 million years ago and ended 65 million years ago. The Mesozoic, also known as the "Age of the Dinosaurs", was when there was an incredible proliferation of these reptiles, which developed many forms and modes of life.

The Mesozoic is subdivided into three stages, the Triassic, the Jurassic and the Cretaceous. In general, the Mesozoic was the time when the first birds and mammals evolved, as well as the first flowering plants, the angiosperms. Geologically, there were important changes in the configuration of the planet which brought about great variation in the distribution and diversity of the fauna of this era. At the beginning of the Triassic the large continental masses were combined into a single supercontinent known as Pangaea. At the end of the Mesozoic, during the Late Cretaceous, the continents had already arrived at a similar position to that of the present day.

A large part of the research carried out by this group is focused on dinosaur fossils (bones, eggs and footprints) from the deposits in the east of the Iberian Peninsula. Specifically, Catalonia, Valencia and Aragon comprise one of the richest areas for Mesozoic reptile fossils in Europe.

The dynamic value of the fossils means that many municipalities in these areas are undertaking projects focused on the conservation and protection of their palaeontological heritage, as well as the revitalisation of cultural tourism.

The research carried out by this group is focused on dinosaur fossils (bones, eggs and footprints) from the deposits in the east of the Iberian Peninsula.

Annual Review 2010

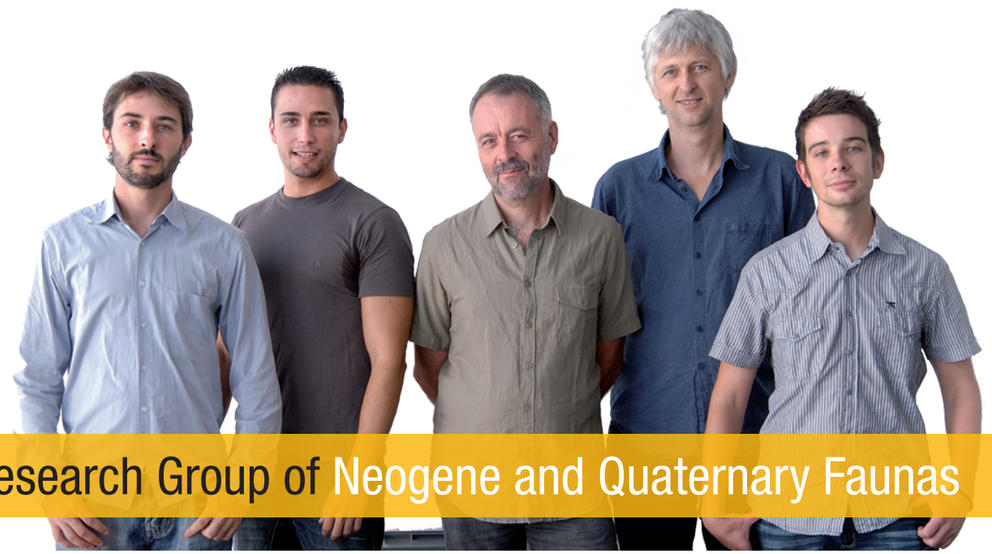
During 2010, the Mesozoic research group generated an outstanding amount of work published in high level scientific journals. In particular, nine papers were published in journals from the Science Citation Index (SCI) and a further nine appeared in national and international journals not in the index. Regarding scientific dissemination, the group gave a total of ten presentations in Catalonia, one in Italy and another in France.

As for participation in conferences, members of the group have presented 36 talks and posters at four international conferences (the International Palaeontological Congress, in London, The Third International Symposium on Pterosaurs, in Beijing, the VIII Meeting of the European Association of Vertebrate Palaeontologists, in Aix-en-Provence, and the 17th World Congress of Malacology, in Phuket) and three national conferences (VIII EJIP in Enciso (La Rioja), XI Jornadas Aragonesas de Paleontología, in Ricla, and the I Jornades d'Arqueologia de la Catalunya Central).

With regard to research projects, the second year of the Ministry of Science and Innovation research project has been completed and funds have been obtained for palaeontological excavations in Catalan sites, through the call for support for archaeological activities, of the Generalitat's Department of Culture. These funds cover the límit K/T project, as well as the Triassic project. At the same time, the group has been awarded two grants for foreign stays (a "short stay" grant from the Ministry of Science and Innovation and a "Synthesis grant").

During 2010, the Mesozoic researchers have been active as reviewers for scientific journals, including three international journals and two book chapters, as well as reviewing research projects for the Plan Nacional I+D 2009-2012 research programme relating to the Agencia Nacional de Evaluación de Proyectos.

Finally, this research group has established two collaboration agreements with Italian research institutes (the Museum of Udine and the University of Bari) with the aim of studying the fossils in the collections of these centres in order to train researchers.



Research Group of Neogene and Quaternary Faunas

Salvador Moyà-Solà
Head of group

Jan Van Dam
Antonio Sánchez
Researchers

Isaac Casanovas
Marc Furió
Daniel DeMiguel
Joan Madurell
Postdocs

Josep Aurell
Àngel Luján
Sílvia Pineda
Guillem pons
Josep M.Robles
Cheyenn Rotgers
Collaborators

The extinction of the dinosaurs 65 million years ago marked the start of the so-called Cenozoic era, popularly known as the "Age of the Mammals", which is divided into three periods, the Palaeogene, the Neogene and the Quaternary.

The Research Group of Neogene and Quaternary Faunas studies the fossils, ecosystems and climatic dynamics of these two periods from different perspectives: from the description of new fossil genera and species to palaeobiology, which infers aspects of the mode of life of these extinct forms, such as diet or locomotion, as well as biostratigraphy and biochronology, disciplines which involve the study of fossil successions in both rock strata and time.

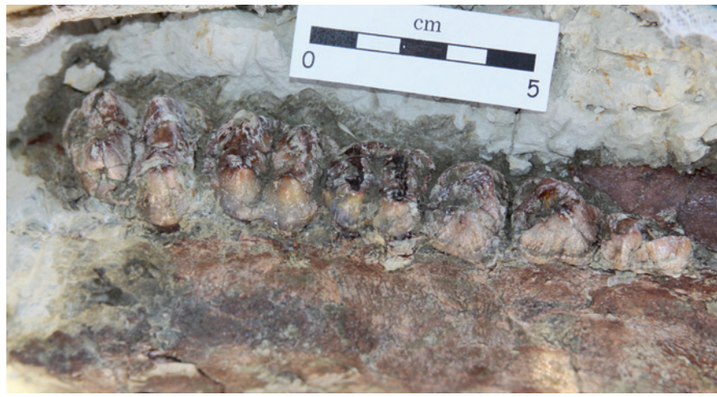
Annual Review 2010

Throughout 2010, the Research Group of Neogene and Quaternary Faunas continued to work on different Miocene sites (from 23 to 5 million years ago) in Catalonia. The assemblage of sites around Hostalets de Pierola, near the extension works of the Can Mata rubbish dump (ACM) and the Can Mata Ecoparc, stands out amongst the Catalan outcrops because of its richness. Furthermore, the Miocene rodents of the basins of el Pla de Barcelona and Baix Empordà have been described, enabling a precise dating of the sediments of those areas.

In parallel, the group has continued studying the fauna of these localities with a description of excellently preserved cranial remains of carnivorous mammals. These include *Trocharion albanense* and the spectacular *Sansanosmilus jourdani*, a sabre-toothed carnivore from the family of barbourofelids. The remains of a small three-toed horse, *Anchitherium,* have also been described as well as remarkably preserved crania of the giant turtle *Cheirogaster* together with remains of different species of snake, and rodents from the type locality of *Pierolapithecus catalaunicus*.

Special attention has been paid to the Neogene successions of other areas of the Iberian Peninsula, such as those of the Calatayud-Daroca (Zaragoza) and Teruel, and Ribesalbes-Alcora to

The group has continued studying the fauna of these localities with a description of excellently preserved cranial remains of carnivorous mammals.



Castellon basins. The results have enabled improved dating of the deposits in these areas (through a combination of methods including biostratigraphy, magnetostratigraphy and cyclostratigraphy) as well as establishing the evolution of the climate, environment and mammal faunas in this area.

In Pliocene sediments, from 5 to 2.6 million years old, the group studied insectivores from the Capu Manu D1 deposits, in Sardinia, Italy.

Of special significance in Catalan Pleistocene sediments, is the description of the remains of the feline *Puma pardoides* from Vallparadís and other Iberian localities, from which it has been established that the present day pumas did not originate in North America, as many experts thought, but rather in Eurasia.

The group has also studied the succession of vertebrates from the deposits in the region of Orce in the Guadix-Baza basin (Granada) which range from the end of the Pliocene to the beginning of the middle Pleistocene (2.6 – 0.5 Ma). The results have enabled both the reconstruction of the climate and environment in this zone of the peninsula and the conclusion that the dispersion of the first humans in the basin, 1.3 Ma ago coincided with a warm humid climate. Beyond the peninsula, the group has studied deposits in Dmanisi (Georgia) and Olduvai (Tanzania), well known for finds from the genus *Homo* which, respectively, are among the oldest known in Europe and Africa.

Finally, 2010 saw the consolidation of the two areas of research of the Neogene and Tertiary Fauna Group: small mammal palaeobiology and the palaeoecology and palaeobiogeography of Neogene fauna. A special mention should be given, regarding the first of these, to the work on the shrew *Beremendia,* present in lower Pliocene deposits such as those at Dmanisi (Georgia). The detailed study of the cranium and dentition of this shrew has revealed that it had a very special adaptation: it poisoned its prey, leaving them in a state of coma for storage in its burrow system and consumption in periods of scarcity.

With respect to palaeoecological and palaeobiogeographical studies, a team made up of members from the ICP, the National Museum of Natural Sciences (Madrid) and *Naturalis* (Leiden, Holland) has published a study on Iberian mammal diversity dynamics during the Miocene climatic changes, from 16 - 5 million years ago. This shows that species richness is directly dependent on climatic changes and that the response to these changes varies with body size in such a way that small mammals are generally more sensitive to the perturbations and are at a greater risk of extinction. This has far-reaching implications, not only for understanding the interplay between animal diversity and climatic changes, but also for designing efficient conservation strategies in the context of current climatic changes.

Research Group of Palaeoprimatology and Human Palaeontology

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Head of group

Raef Minwer-Barakat
David M.Alba
Sergio Almécija
Postdocs

Judit Marigó
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Marta Pina
Imma Roig
Predocs

Marta Palmero
Scientific illustrator

Ivette Susanna
Collaborator

The Research Group Palaeoprimatology and Human Palaeontology at the ICP studies the evolutionary history of humans and primates through fossils remains, focusing on the phylogenetic relationships between the various species and the origin of the hominid family, to which man belongs.

Currently, the group is following several research lines mainly focused on the study of pliopithecid, cercopithecid and hominoid primates.

The members of the group analyse the fossils from three different perspectives: taxonomy, based on the description of genera and species; phylogenetics, which analyses the origin of the different groups and how they are related; and palaeobiology, focused on the evolution of biological aspects, such as locomotor adaptation and changes in physiological traits, processes of maturation and longevity of individuals, as well as cognitive capacity according to encephalic volume.

Annual Review 2010

Throughout 2010, the Palaeoprimatology and Human Palaeontology group worked in two main areas: Miocene primates, particularly hominoids, and Palaeogene primates.

Work on cranial and dental material from hominoids has led to several studies on the Vallès-Penedès forms and how they are related to current forms, such as the cranium of *Pierolapithecus* (Pérez de los Ríos *et al*., 2010 a,b), a study on enamel thicknesses in hominoid fossils from the Can Mata localities. Of particular interest is a study on cognitive inferences in hominoid fossils based on encephalisation (Alba, 2010 a, b).

The group is following several research lines mainly focused on the study of pliopithecid, cercopithecid and hominoid primates.

Regarding the postcranial skeleton of the hominoids, previously unpublished remains cf. *Dryopithecus fontani* have been described from Castell de Barberà (Alba *et al*., published online, Almécija *et al*., in press), and preliminary results on the vertebrae have been published (Susanna *et al*., 2010 a,b) and (Alba *et al*., 2010 b). Studies on the phalanges of the hominid fossils (Alba et al., 2010 c,f; Almécija *et al*., 2010 a,b) and other aspects of the hominoids from the Can Mata section (Alba et al., 2010d; Moyà-Solà *et al*., 2010; Almécija *et al*., 2010 c), including their chronology (Casanovas-Vilar *et al*., 2010 c), form an important part of the results obtained in 2010.

A special mention is due to the results from the research into the origin of primate and human hand adaptations: Sergio Almécija, Salvador Moyà-Solà and David M. Alba published an article in the journal *PlosOne* entitled *"Early Origin for Human-Like Precision Grasping: A Comparative Study of Pollical Distal Phalanges in Fossil Hominins"* detailing the results of a study into distal phalanges of thumbs in primates and hominids, in particular the oldest known biped material, Orrorin tugenensis. The results clearly show that the origin of the manipulation and precision capabilities typical of humans is related to a relaxation in natural selection pressure on locomotion in upper limbs, i.e. the appearance of bipedalism.

In Palaeogene primate research, the analysis of the remains from Mazaterón (Duero basin) has led to the definition of a new genus and species of adapiform, *Mazateronodon* endemicus, which has helped clarify the phylogeny of the tribe *Anchomomyini* (Marigó *et al*., 2010 a), a group of fossil forms, specific to the Mediterranean area which play an important role in the study of modern day prosimians. Moreover, a detailed study of the material from the Sant Jaume de Frontanyà deposit (South Pyrenean basin) has enabled the definition of two new species, the first of which, the omomyid *Pseudoloris pyrenaicus*, represents the most complete sample of the genus ever found on the Iberian Peninsula, and has led to the proposal of an anagenetic line which evolved in Europe during the middle and late Eocene (Minwer-Barakat et al., 2010 a,b). Secondly, the adapiform *Anchomomys frontanyensis* has confirmed the existence on the Iberian Peninsula of a lineage of this genus different from that which was living in Europe, and has contributed, moreover, to a better understanding of the phylogenetic relationships of the tribe *Anchomomyini* with the asiadapines and the present day lemuriforms and lorisiforms (Marigó *et al*., 2010 b, c, in press).

Finally, the aforementioned deposits have provided a rich abundance of postcranial Eocene prosimian remains. Our research team has published various preliminary studies aimed at determining the evolution of the different locomotor patterns in these first representatives of the order Primates (Roig & Moyà-Solà, 2010; Roig *et al*., 2010).

Scientific Illustration

The ICP Illustration, included within Palaeoprimatology and Human Palaeontology, aims to produce scientific drawings to be included in the Institute's research work and publications.

The illustrations are very useful as they describe in precise and minute detail the anatomy of the fossils observed, putting emphasis on important diagnostic characteristics. At the same time they allow three-dimensional aspects of the specimens to be highlighted which a photograph could not show.

Within this department is highlighted the development of reconstructions depicting the prehistoric animals and organisms studied at the ICP as they would have been in life. The reconstructions have great educational value, as they reach a less palaeontologically specialised public.

For this reason, the Department of Illustration is one of the centre's keys to scientific dissemination.

Research Group of Palaeobiology

Meike Köhler
Head of group

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Researcher

Xavier Jordana
Soledad de Esteban
Postdocs

Nekane Marín
Predoc

Laura Fernández
Rubén García
Laboratory technicians

Palaeobiology is a modern branch of palaeontology that looks at biological aspects such as locomotion, thermoregulation, growth rates and longevity, among other things, in extinct animals.

The aim of palaeobiology is to define the selective pressures on and evolution of species and populations, taking into account physiological and morphological traits and the life history of each animal.

The Research Group Palaeobiology of the ICP focuses on mammals that lived in ecosystems with limited resources, such as islands, caves or mountain peaks. Insular ecosystems are of special interest because of the lack of predators and of interspecific competition as a result of the resource limitation imposed by the limited land area. Under the chronically low resource levels, insular endemics have to reduce their energy expenditure, which leads to changes in morphological, physiological, metabolic, reproductive and behavioural traits.

A key species for palaeobiological studies is *Myotragus balearicus*, a goat –like caprine bovid that was the only large endemic mammal on the Balearic islands Mallorca and Minorca where it survived for more then 5 million years and that became extinct some 5000 years ago. This goat evolved singular traits as a consequence of the effects of insularity.

Annual Review, 2010

The central aim of the research group during 2010 was the reconstruction of life histories for a series of fossil mammals. Tool for such studies is hard tissue histology both of teeth and of bones. Because of the lack of comparative studies on extant mammals that could serve as a basis for our understanding the ecological and the physiological correlates of hard tissue growth cycles as well as the developmental implications in fossil mammals, the study of extant mammalian species made up an important part of the research.

The Palaeobiology research group of the ICP focuses on mammals that lived in ecosystems with limited resources, such as islands, caves or mountain peaks.

Dental Histology

During 2010, the paleobiology group analysed numerous histological sections of dental fragments of the fossil insular bovid *Myotragus balearicus*. Quantification of the enamel growth lines. revealed that the molars of this bovid formed more slowly and over a longer period than those of modern bovids, suggesting that *Myotragus* delayed somatic growth by growing slower than modern bovids of similar body weight.

Computed tomography (CT) of the mandibles of fossil and modern bovids was carried out to analyse and to compare patterns of ungulate dental eruption, a trait closely related to mammal life history traits. The results show that the pattern observed in *Myotragus balearicus* differs from those of present day bovids of similar body weights; instead, it resembles those of heavier, longer-lived bovids. This pattern involves a very slow eruption sequence of the posterior dentition, with a particularly long delay in the emergence of the third molar.

The adaptations of dental development and growth observed in the fossil bovid *Myotragus* are interpreted within the special ecological context of insularity, characterised by limited energy resources and a decrease in extrinsic mortality due to an absence of predators.

Bone Histology

The palaeobiology group has also carried out various bone histology studies on different mammalian groups, specifically glirids, murids and artiodactyls.

Dormice (glirids): The bone histology of extant glirids (*Glis glis* and *Eliomys quercinus*) has produced important results regarding the intra-individual variability in numbers of lines of arrested growth (LAGs) for the four long bones. The comparative study shows that the femur is the most reliable bone for counting these structures. Consequently, the group tried to explain why this should be so by relating glirid histology with biomechanics. The results were clear: the femur best preserves the LAGs because it exhibits a less abrupt change in its morphology during the development of the individual, whilst in the other long bones (such as the ulna) or in the mandibles, the change of form leads to a strong remodelling which usually erase some of the structures of interest, such as the LAGs. Counting LAGs in these extant individuals provided certain life history traits such as the age of the individual (from which the longevity of the species may be inferred) and the number of litters per year. These results were presented at the symposium on *Perspectives on Vertebrate Evolution: Topics and Problems* symposium in Paris, France.

Rats (murids): Dormice are a taxonomic group with an exceptionally slow life history for body size. Therefore, it was necessary to compare the bone histology of dormice with that of species belonging to a taxonomic group of rodents with similar body sizes but faster life histories. We chose to study two species of murids (*Rattus rattus* and *Rattus norvegicus*). The results once again revealed the presence of LAGs in these rodents, a fact that allowed an age estimation of the individuals. It was found that these murids present a greater frequency of additional structures than the glirids, with several LAGs forming in the same year. These results were presented at the *8th Annual Meeting of the EAVP*, 7-12 June 2010 in Aix-en-Provence (France).

Artiodactyls: Thin sections of long bones, usually femora, have been made from several families of fossil ungulates, such as *Tragoportax gaudryi, Gazella borbonica, Croizetoceros, Eucladoceros senecensis and Paleomeryx*. The preliminary results suggest that is possible to determine specific histological patterns at family level that could be linked to different life history strategies.

In collaboration with the Norwegian Polar Institute (Oslo, Norway), the palaeobiology group has been able to collect the skeletons of some 20 dwarf reindeer (*Rangifer platyrhynchus*) from the Norwegian polar island Svalbard. This material is unique and not represented in any other museum. Because this cervid is one of the few large island mammals not yet exterminated by man, it is of vital importance for the studies on fossil insular mammals conducted by the ICP Palaeobiology group.

Finally, results on life history of the fossil insular bovid Myotragus inferred by bone histology were presented at the symposium on Perspectives on Vertebrate Evolution: Topics and Problems symposium in Paris, France as an “invited lecture”.

Research Group of Virtual Palaeontology

Josep Fortuny
Coordinator

The research group of Virtual Palaeontology, created in 2007, aims to explore new methodologies which can be applied to diverse areas of palaeontology. This cross-cutting department, cooperates and works with the various ICP research groups and uses digital tools which are neither invasive nor destructive, and appropriate to each element of the study. The technology is used to streamline and optimise the results of palaeontological research.

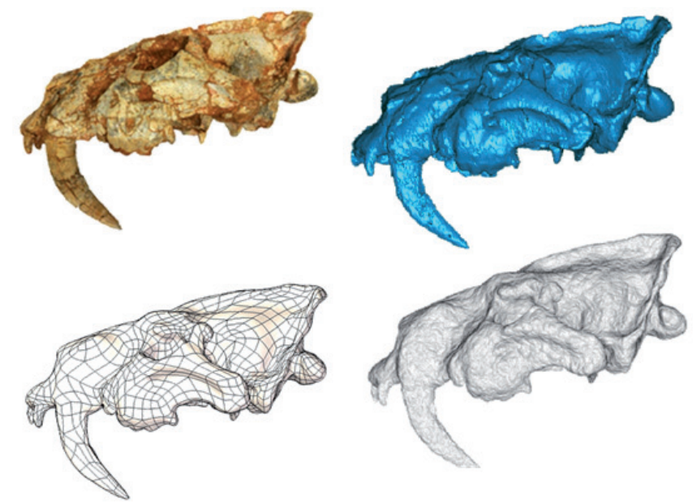
During 2010, results were published relating to the use of techniques such as computed tomography (CT) while new lines of research into the field of biomechanical simulation were initiated.

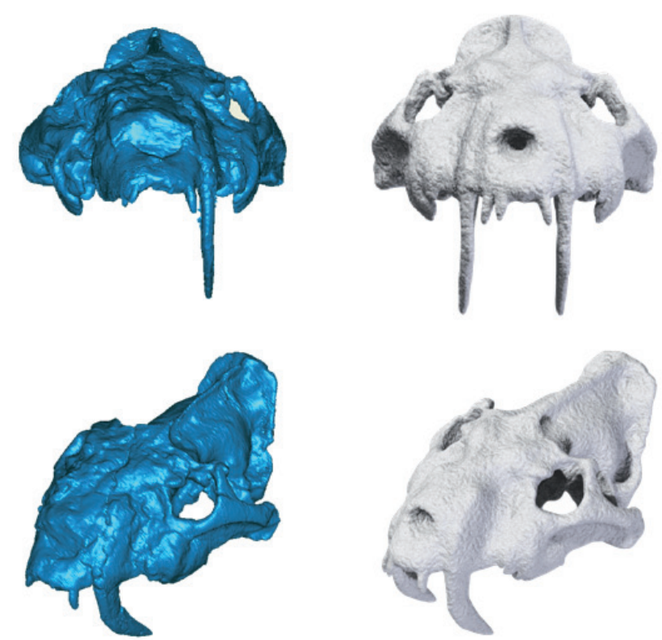
Tomography is being used in an increasingly generalised way in diverse fields of science, as it allows the rapid collection of high precision, quality images. In the case of palaeontology, medical and industrial-type tomography enables the observation of the internal composition of fossils in a non-aggressive manner, that is without having to physically section the sample under study. In short, in 2010, the Virtual Palaeontology department generated valuable results in the fields of palaeoprimatology, palaeobiology and dinosaur palaeontology.

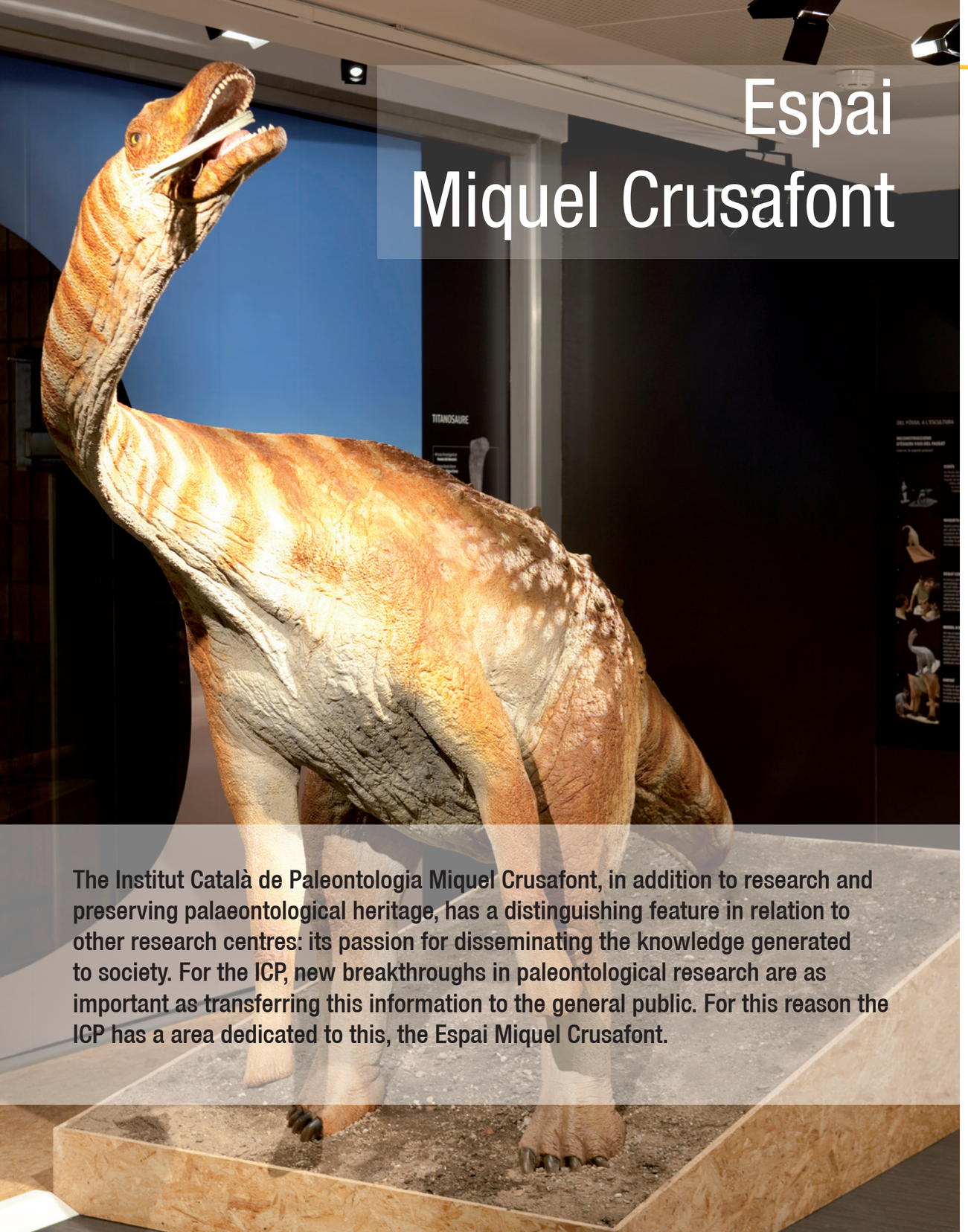
Also during 2010, the department began a stable collaboration with engineers from the Department of Strength of Materials and Structural Engineering at the *Universitat Politècnica de Catalunya* (UPC) to undertake biomechanical simulations. These simulations allow testing of the structural capacity of biological elements (such as the skull) and the obtention of qualitative and quantitative results allowing the exploration of, for example, the feeding biology of extinct species.

In order to obtain these simulations, two- and three-dimensional models of the structures under study were created. It should be pointed out that computed tomography (CT) plays a relevant role in this field because, as well as being an important tool for the analysis of internal areas, it also enables the creation of three-dimensional models which can be used for biomechanical simulations.

The first results obtained in this field were presented at international conferences in 2010, and are currently in the publication phase.







Espai Miquel Crusafont

The Institut Català de Paleontologia Miquel Crusafont, in addition to research and preserving palaeontological heritage, has a distinguishing feature in relation to other research centres: its passion for disseminating the knowledge generated to society. For the ICP, new breakthroughs in paleontological research are as important as transferring this information to the general public. For this reason the ICP has a area dedicated to this, the Espai Miquel Crusafont.

I. The renovation of the Espai Miquel Crusafont

In 2010, the Espai Miquel Crusafont, located in the heart of Sabadell, was the object of an ambitious infrastructure improvement project, which was the reason for it remaining closed to the public for the first three quarters of the year.

The renovation work has resulted in the redistribution and comprehensive reform of the spaces in the building, spread over four floors. Currently, the departments of Collections Management, Activities, Archives, Maintenance and part of the area of Preparation and conservation are currently housed together.

1. The new exhibition: Today you investigate! (Avui investigues tu!)

In January 2010 the new exhibition project of the ICP was initiated. The Institute understood that the new proposal would explain to visitors what palaeontological research is and what the Institute does. Based on this premise was the initial idea that *processes* were to replace *objects*, marking a turning point in the exhibitions which had previously been in the Area. The goal is that the visitor becomes a paleontological researcher.

The most innovative and suitable proposal was submitted by the company *Touché Projectes Culturals.*

The new exhibition is entitled "*Today you investigate!*". This emphasises the fact that the visitor will put themselves in the shoes of a paleontologist and be led through the 5 stages which any ICP researcher has to go through. These 5 stages are specified in 5 exhibition areas, namely:

- *Excavation*
- *Fossil preparation and preservation*
- *Investigation*
- *Publication*
- *Communication of new knowledge*

The crux of the new proposal is an interactive application which, based on videos and games, guides visitors through the research process. In this way, the user provides the impetus of the visit. Access to the interactive exhibition is via a card that is picked up at the reception desk, and which has a code allowing visitors to enter the application and start a *personalised* tour through the exhibition. The information generated from the answers accumulates on the card and is kept throughout the visit. With the data obtained, the visitor can simulate the publication of an article in a SCI (*Science Citation Index*) journal and have it sent to their email address. This last step extends the learning experience to outside the ICP.

Another challenge for the Centre was to explain the most information possible in the 167m² of the exhibition. It was necessary to offer a proposal that would both direct the flow of visitors and make it possible for the user to visit the Area again, without repeating the content. This was resolved by proposing four real case studies drawn from current research of the ICP

These four case studies, representative of each of the research groups, are randomly assigned to visitors, so they can repeat the visit four times, each time finding new content in the exhibition. The area of Virtual Palaeontology is present in all of the research in the visit, as it is a cross-disciplinary science.

The exhibition offers different reading levels, so that everyone feels comfortable and enjoys the experience. The interactive journey is combined with real pieces, to display the work, and panels with written texts. The information offered is redundant so that different interpretations are not mutually exclusive but rather complementary.

Effort has been made to make the building accessible to all sectors of the potential public. All content is in Catalan, but translated into Spanish and English. The entire audio content has also been subtitled and a magnetic loop has been installed for people who wear a hearing aid. For people with limited mobility, the minimum width of corridor allows for wheelchair access and all the steps have been removed. A specialised visit for people with visual disabilities still remains to be prepared.

Case study	Research area
Beremendia fissidens	Neogene and Quaternary Faunas
Pierolapithecus catalaunicus	Palaeoprimatology and Human palaeontology
Titanosaure	Mesozoic Faunas
Myotragus balearicus	Palaeobiology
Virtual palaeontology	

Activities and Archive

Laura Celià
Coordinator

Jordi Balaguer
Educational and Dissemination Activities

Teresa Esquirol
Head of Archives and Documentation

Teresa Requena
Archivist and Documentarist

Mònica Cucurella
Maria Pereira
Reception and Shop

2. Other public areas from the new project

In addition to the "Today you investigate!" experience, the ICP offers visitors other exhibition spaces that complement the ground floor exhibition. These areas are:

- *Virtual Reality Room. Developed using fund ing from the Generalitat de Catalunya (Inforegió) and with the collaboration of the UPC. Visitors can view and handle fossils in 3D, thanks to polarised glasses.*
- *How are fossils formed? This space, located on the first floor, explains the basic concepts of paleontology: What is a fossil? How is it formed? What kinds of fossils are there? What is paleontology used for? The information includes a virtual application that reproduces the Pyrenees of 70 million years ago.*
- *Collections room. This is integrated into the exhibition tour via a window and an explanatory panel, so that visitors understand the importance of the collections and can see the real places where fossils are preserved.*
- *Preparation laboratory. With the intention of showing visitors the real work spaces and making the centre more transparent, the prep lab can be seen from the first floor of the exhibition.*
- *Staircase. This space contains references to Miquel Crusafont i Pairó in recognition of his work in the world of paleontology.*

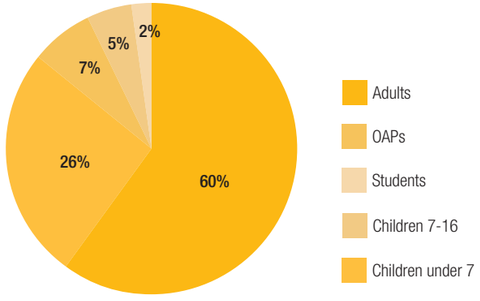
II. Inauguration of the new Espai Miquel Crusafont

On September 28, 2010 the new Espai Miquel Crusafont opened in an official ceremony in which more than one hundred people participated. The delegation comprised the director of the ICP, Salvador Moyà, the Rector of the Universitat Autònoma de Barcelona, Ana Ripoll, the Director General of Research from the Department for Innovation, Universities and Enterprise of the Generalitat de Catalunya, Joan Roca, and the Mayor of Sabadell, Manuel Bustos.

On October 2 and 3, to coincide with the centenary of the birth of Miquel Crusafont i Pairó, and to mark the beginning of the Crusafont Year, an open day was held in the new Espai. The activities for children and other events attracted a huge crowd of people. Since October 5, the Espai Miquel Crusafont has been open to the public.

III. Visitors to the Espai Miquel Crusafont

Between October and December 2010, a total of 6,975 people visited the new ICP exhibition, with the following distribution:



IV. Science dissemination activities

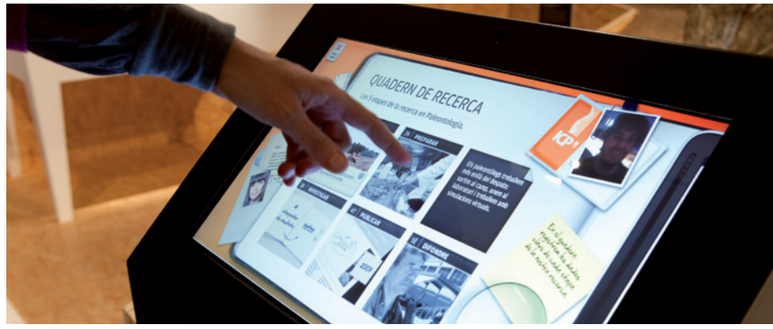
1. During the renovation process (January – September 2010)

During the period in which the improvements were made, activities continued to be developed within 34 schools, including the educational loan pack (*Dinosaurs, Human Evolution and Fossil Diversity*), the *Year of the Earth* activity: *Ask and we reply*, organised in collaboration with the Geological Institute of Catalonia for primary and secondary schools and adults in Sabadell, which included the participation of 8 centres, and the *Adopt a fossil* activity designed by the ICP and meant to encourage careers in science and promote respect for and interest in paleontological heritage.

Additionally, the *exhibition Pau, the Pierolapithecus: a key element of human evolution* has been running since July 16, 2007, in Hostalets de Pierola. The ICP also participated in the Education Fair from March 17 to 21 in Barcelona, in the Research in Action space of *Talència* (the new institution for promoting research in Catalonia).

Moreover, various collaborations have also been maintained, including:

- ***With Sabadell Town Hall:***
  - The preparation of the sixth edition of the Statistical Yearbook of Sabadell.
  - The preparation of the analytical study of tourism resources and organisation proposals for a tourism office in Sabadell.
  - International Tourism Fair.
  - Council of City and School Entities.
  - With Sabadell University, an association including Sabadell Town Council and the universities and colleges with a presence in the city: the UAB, UOC, UPC Foundation, ESDI, the Fundació Parc Taulí-Institut Universitari and the Institut Català de Paleontologia.
- ***With the Centre de Recursos Pedagògics from Vallès Occidental in the preparation of research proposals and other diverse activities.***
- ***With the special education school Mare de Déu de Montserrat, for children with special educational needs due to emotional or personality disorders, maturity, psychomotor or rhythm problems. Joan Josep Marfany did an internship at the ICP.***



2. After the inauguration: new Department of Educational and Dissemination Activities

Together with the new era of the ICP and renovation of the Espai Miquel Crusafont a new Department of Educational and Dissemination Activities has been inaugurated, whose mission, since June, has been to develop a programme of directed activities, focusing on both educational centres and the educational world in general.

The department has designed a programme of regular activities based on 16 new proposals offered at the Espai Miquel Crusafont (Sabadell) since October 2010. The workshops cover all educational levels and sectors of the public including new family and weekend activities.

In order to demonstrate to the public what palaeontology is, as well as showing some of the most important fossils in Catalonia, Valencia and the Balearic Islands, the Department of Activities works in several formats, such as striking photographs, casts of fossils and audiovisual or multimedia tools. Some of the workshops can be done in schools by their own teachers.

Currently, the Department of Activities works with the company *Nusos, Activitats Científiques i Culturals*, which is responsible for running the workshops and activities of the Museum.

The programme of activities in two blocks:

Block 1: Regular programme

This includes a total of eleven new workshops aimed at schools and other organizations and groups, as well as activities for families (see http://www.icp.cat/images/stories/ICP_Agenda_Didactica.pdf).

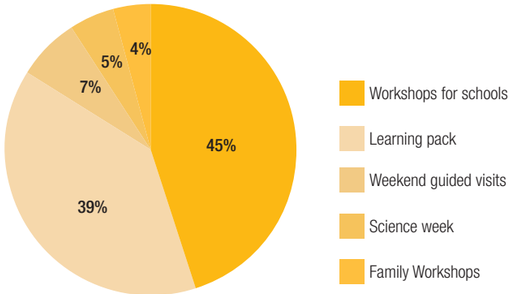
- *The guided tours (for groups, midweek or at the weekend) have been redesigned, and added to the existing activities such as the free loan of the teaching pack. All the directed activities reflect the work and fields of study of the different research teams.*
- *Execution of 60 directed activities (workshops and guided tours), for a total of 31 educational centres.*
- *Execution of 20 guided weekend visits for a total of 225 visitors of different ages.*
- *Execution of 3 test family workshops, with 31 participants.*
- *he loan of a total of 11 educational packs to 5 different educational centres.*

Block 2: Occasional programme

For specific events, usually linked to specific dates or other campaigns.

- *Two small activities in the Festival of Science in the Ciutadella Park : 40 attendees.*
- *Opening ceremony of the school year and City and School programme: 120 attendees.*
- *Events linked to Science Week: 200 attendees.*

In total, between October and December 3,491 people enjoyed the activities offered by the ICP.



V. Subsidies

The following subsidies were awarded:

- **Social communication project for paleontological research. FECYT. Objective: To obtain funding for the outsourcing of monitoring for educational activities. Quantity awarded: 20,000€.**
- **Project for the redevelopment of the exhibition. Generalitat de Catalunya, Department of Culture and Media. Objective: To obtain funding to change the exhibition. Quantity awarded: 14,536€**
- **Accessibility Project to promote research. Generalitat de Catalunya, Department of Universities and Research (AGAUR) ACDC call. Objective: To disseminate paleontological research to children with visual disabilities. . Quantity awarded: 3,000€.**

TOTAL FINANCING RECEIVED: 37,536 €

Collections Management

Laura Celià
Head of Collections Management

Marta March
Collections Management technician

Xavier Oller
Collaborator

The Collections Management department is responsible for carrying out the cataloguing and labelling of each and every fossil, as well as their inclusion in the database of the centre. The purpose is to maintain an efficient control and make the pieces easily available to researchers at the centre in a both fast and reliable manner.

The ICP's palaeontological collections contain more than 200,000 specimens, aged 240 million years old to 10,000 years old. Thanks to the palaeontological actions the ICP performs, the collections continue to grow year after year.

The management procedure involves the recording of each fossil with an accompanying catalogue number, including all of the relative information about the site from which it comes, its age, the anatomical part and the animal or species to which it belongs. Lastly, the place where the piece is stored is recorded. All of these measures guarantee the proper administration and documentation of the fossil specimens and facilitate the communication of their scientific and patrimonial importance.

Records

In 2010 a total of 6,634 fossils were recorded in the registers. The ICP collection currently has 55,682 records.

Computerisation

As for the computerisation of the catalogue, the Museumplus project was resumed, a collections documentation programme provided by the Generalitat (Department of Culture and Communication). Because of the inadequacy of Museumplus for scientific collections, it was necessary to adapt the architecture of the programme to suit the needs of the palaeontological record. After a year of work, the new Museumplus database includes 42,300 records (more than 75% of the total recorded in books).

Consultations

Because of the closing of the collections due to the remodelling of the Espai Miquel Crusafont building in Sabadell, it was not possible to make consultations between January and September 2010. A total of 21 demands were received, both domestic and foreign, that involved the moving of 2,500 fossils.

Loans

Several replicas have been loaned out for science communication purposes (to the QuèQuiCom programme on TV3, an exhibition at the mNACTEC and to an exhibition about Darwin, in Switzerland). The management of materials loaned from other institutions at the request of researchers from the ICP has also been carried out. Worked has been undertaken with the Museum of Barcelona and the University of Kiel.

New compact storage

Last year the new collections spaces project was designed. These spaces are now integrated into the public visit via a window that allows the visitor to grasp the importance of the collections and the organisation of the store.

The new compact cabinets triple the previous amount of storage space and were made-to-measure for the ICP collections. They include the latest travel and security technology. The work has also allowed other risk factors to be eliminated (e.g., water pipes and floor tiles), achieving a hermetic space. At the same time, a temperature and humidity control was incorporated.

New technology

As a final project to highlight, initiated by this sub-area, was the incorporation of radio frequency technology (RFID). The ICP has begun a new line of work and collaboration with the company Saident, a pioneer in RFID technology, to launch an innovative project throughout Catalonia: the incorporation of passive radiofrequency for conducting inventories and monitoring the collections.

Research Support

Preparation and Conservation

Sandra Val
Head of Preparation and Conservation

Xènia Aymerich
Carolina Cancelo
Nuria Guerrero
Domingo López
Marina Rull
Marta Valls
Preparators / Curators

The Preparation and Conservation lab of the ICP is involved in the preparation of fossil remains and the creation of moulds and casts.

When preparing a fossil, the preparators-curators, work with various procedures in order to optimally preserve the fossils over time. To this effect, the lab has modern and varied equipment to counteract the deterioration which may arise in the fossils to be treated.

There are two principal preparation methods: mechanical ones which mainly consist of removing the unnecessary rock around the fossil using hammer and chisel, and chemical methods, based on the use of reagents to dissolve the excess rock.

One of the fundamental tasks of the lab is making moulds to produce replicas of the original pieces. This allows the researchers to work on pieces which are identical to the original fossils avoiding endangering the genuine specimen. Many of the replicas are also put on display for the public and exchanged with other research centres.

Finally, it is necessary to highlight the ever more necessary task of science communication which is carried out by the Conservation and Preparation lab. This includes participation in conferences, workshops for restoration students, the writing of articles for diverse publications and open days, among others.

Thanks to the excellent professionalism of the personnel of the group, as well as the huge volume of material that they generate, both for our centre and other institutions, the Conservation and Preparation lab is fundamental to the development of the centre.

Annual review 2010

In 2010 the department of Preparation and conservation prepared a total of one thousand fossil remains from various deposits.

One of the highlights was the preparation of a clutch of dinosaur eggs found in the Coll de Nargó (by the research group of Mesozoic faunas).

Additionally, the department of Preparation and conservation of the ICP actively participated in the creation and design of an exhibition laboratory integrated into the new Espai Miquel Crusafont in Sabadell. This lab has big windows in order to display to the visitors how the restorers-preparers of the ICP work. Once again the centre has placed emphasis on its tradition of science communication.

Preparation of current skeletons

In order to provide a wider range of comparative material for the researchers, the lab constantly prepares skeletons of present-day specimens. In 2010 the following preparations were carried out:

- *Preparation of a bird cranium.*
- *Preparation of two turtles.*
- *Preparation of a snake.*
- *Reconstruction of the cranium of a giant salamander from the MCNB.*
- *Making of moulds and copies.*

The fossils found by the ICP team are unique and very valuable and also are often very fragile. This is why making moulds and copies has become of the principal tasks of the Conservation and Preparation Lab as it allows the staff of the Centre to do research using replicas without needing to handle the originals. Moreover, the moulds and copies are habitually exchanged with other research centres in order to broaden the material available for study.

New preparation techniques and chemical trials

The department of Preparation and Conservation is researching new preparation techniques for materials requiring complex preparation, either because of their nature or due to the media in which they are found. For this reason the laboratory has been in contact with palaeontological preparation centres in other countries to learn further techniques and methods applicable to our material.

In 2010 new chemical techniques were used on the following material:

- ***Chemical cleaning of microfauna for electron microscopy study.***
- ***Preparation of highly carbonated remains from Can Mata with buffered acids.*** **Miocene**
- ***Chemical cleaning trials on dinosaur egg shells for electron microscopy.*** **Cretaceous**
- ***Chemical cleaning trials to work out a preparation system for the Capitosaur of Montseny-*** **Triassic**
- ***Chemical cleaning trials for the study of*** **Fumanya *cuticles.***
- ***Technical support for Collections Management by undertaking complex packaging for the shipment of large fossil remains from the Espai Miquel Crusafont exhibition.***
- ***New storage and packaging systems using new techniques and new materials.***
- ***The creation of new exhibition support systems for nests of dinosaur eggs.***

Training: practicals, workshops and open days.

In order to train new restorers-preparators of paleontology, the lab offers practicals on two afternoons of the week and in the summer months to the students of the *Escola Superior de Conservació i Restauració de Béns Culturals de Catalunya.* The opportunity to work with original materials enables the students to achieve an unparalleled level of knowledge and professionalism.

A team of six restorers-preparators has worked for two months on the following material:

- *Cal Guardiola deposit: Preparation of fossil remains. TOTAL 95*
- *Can Filuà deposit: Preparation of Miocene giant turtles. TOTAL 8*

Second Conservation Workshop on Natural History Collections

In 2010 the Conservation - Preparation team designed the outline and contents of the II Conservation Workshop to be held in 2011. For this, international speakers have been contacted who will attend the event and information has been distributed via circulars containing the relevant information.

Palaeontological Heritage.

The Conservation and Preparation lab collaborates in the teaching of Palaeontological Heritage (for the Master of Heritage in the History Faculty of the Universitat de Barcelona). Specifically, a class is given on all of the techniques of palaeontological preparation and preservation, with emphasis on methods appropriate to the materials to be dealt with.

In 2010 the following reproductions were produced:

RESERCH AREA	MOULDS AND COPIES
NEOGENE/ QUATERNARY **PALAEOPRIMATOLOGY**	**Primate moulds and copies:** • *Dryopithecus fontani* • *Hispanopithecus laitanus* Can Feu • Hispanopithecus laietanus Can Llobateres • *Pieralopithecus catalaunicus* • Material from Castell de Barberà • Material from Can Ponsic • Classic Can Llobateres material. • *Oreopithecus* • *Anoiapithecus* Reconstruction • *Pliopithecus canmatensis.* • EDAR material. • **TOTAL: 290 approx.** **Moulds and copies of micro dentition**
MESOZOIC	• Tres cranis - Edingerella *madagascariensis* (Lower Triassic) • Dinosaur Ostenoderm • **TOTAL: 6**
PALAEOBIOLOGY	**Moulds and copies of endocrania:** • **TOTAL: 32 approx.**
COMMUNICATION COLLETIONS MANAGEMENT	• 5 *Myotragus* Crania • 5 *Pierolapithecus* Crania • 9 dinosaur eggs • 1 Titanosaur femur • **TOTAL: 20**

Financing

Quotes presented from external services:

TOTAL	TOTAL VAT	
22,500 €	**26,100 €**	Can Filuà- GEOTERNA,SL
15,000 €	**17,400 €**	Vallparadís –GEOTERNA,SL
40,000 €	**46,400 €**	Museu Zoologia -MCNB
7,920 €	**9,920 €**	Coll de Nargó – Generalitat
7,000 €	**8,260 €**	Museu Geologia -MCNB
5,500 €	**8,260 €**	B-40 - Subvenció Generalitat
46,000 €	**53,360 €**	Zoology Museum - MCNB
1,000 €	**1,180 €**	Zoology Museum - MCNB
18,000 €	**21,240 €**	B-40 - FOSSILIA,SL
TOTAL: 192,120 €		

Palaeontological Deposits and Sites

Jordi Galindo
Head of Palaeontological Deposits and Sites

The department of Palaeontological Deposits and Sites, which manages the entry of material from palaeontological actions through the relevant administrative procedures. These actions may be preventive, emergency, or integrated within specific research projects. In 2010, the ICP received material from fifteen actions, resulting in 21,333 entries to the fossil collections. The pieces are stored and managed in the general warehouse, organising the current spaces and guaranteeing them for the future.

The fossil material mainly comes from the group of Mediterranean basins found in Catalonia as well as a large number of those from the Iberian Peninsula. Specifically, sites of particular importance are in the counties of Pallars and Berguedà (pertaining to the Cretaceous period), from the Vallès-Penedès area (Neogene period) and the Cal Guardiola and Vallparadís deposits in Terrassa (Quaternary period).

Management of palaeontological deposits and sites

In 2010, 21,333 fossils entered the ICP. This means the collections now stand at a total of 215,068.

Entries 2007	Entries 2008	Entries 2009	**Entries 2010**
4,344	10,384	9,235	**21,333**

Incoming loans

This year the incoming loan of fossil remains from the Triassic deposit at Vilanova de la Sal (Les Avellanes and Santa Linya, La Noguera), from Francisco Martinez Paul, was formalised.

Computerisation

A computer database allowing rapid searching of materials in the warehouse was created. This database has 775 records, corresponding to the total number of entries in the store from 2007 until March 2010.

Management of palaeontological material in a temporary depository at the ICP

Palaeontological material from the Mesozoic deposits of Berguedà was inventoried in order to make the final depository in the Mining Museum of Cercs. This inventory was prepared at the request of Xavier Ámese from the Secció d'Actuacions del Servei d'Arqueologia i Paleontologia.

Management of the transport of the clutch of dinosaur eggs from the Pinyes site of the Generalitat de Catalunya (Coll de Nargó, Alt Urgell) from the ICP's Preparation and Conservation Laboratory to the Espai Miquel Crusafont. All of the administrative procedures necessary for the exhibition of the nest in the area, until they go to their final deposit, were carried out.

Consultations made about deposits and ICP collections by people from outside the centre.

Consultations were made for the inclusion of the palaeontological heritage of Sant Pere de Ribes on a map of the cultural heritage of St. Pere de Ribes. Also, the department of Paleontological Deposits and Sites met with the City Council of Vacarisses to put two paleontological locations on the cultural map of the municipality, and also with the Office of Cultural Heritage of Barcelona Provincial council in order to locate paleontological sites on the cultural heritage map of Viladecavalls.

Management of the general store

Exhaustive and systematic research has been conducted on the paleontological materials in the general store responding to requests by researchers at the centre. The preparation work for inserting the fixed shelving of the old general store of the museum of ICP was organised and supervised, as was the storage of the fossil remains therein.

Communication and Scientific Dissemination

Sílvia Bravo
Head of Communication
and Scientific Dissemination

Xènia Castellà
Communication
Apprentice

Department of Communication and Scientific Dissemination

The Department of Communication and Scientific Dissemination (*DC2*) aims to:

- **Provide information about the ICP** as a centre of reference in Catalonia for research, conservation and palaeontology communication**.**
- To support the positioning of the ICP on the **scientific world stage.**
- Provide support for different scientific, communication and technical projects at the ICP.

To achieve this, the DC2 has designed a communication and promotion strategy based on **diversification of formats, channels and audience**.

The ICP in the headlines

Media Communication

The research and technical activities of the ICP continuously generate scientific and communication articles, important fossil finds and new techniques which make it a pioneer institute in palaeontology around the world. Additionally, in the excavation work associated with this discipline, the ICP works on the country's most important deposits.

In order to publicise all this activity, the *DC2* **writes and distributes press releases and is in contact with journalists and other science communication professionals** to ensure the publication of current ICP news in the different, predominantly state and Catalan, media.

ICP research has been in the news on TV3, in the La Vanguardia and El Periodico newspapers, on Catalunya Ràdio and COMRàdio, as well as many blogs and social media sites.

In 2010, the ICP generated four press releases which, along with other more specific communications, meant the centre hit the headlines in some thirty different media channels. These highlighted the opening of the Espai Michel Crusafont Sabadell, as well as the largest clutch of dinosaur eggs ever found in Europe.

The ICP – open to all

The ICP webpage and bulletin

The ICP news, together with details about the team and the different projects they are involved with can be found on the **webpage and in the digital bulletin**.

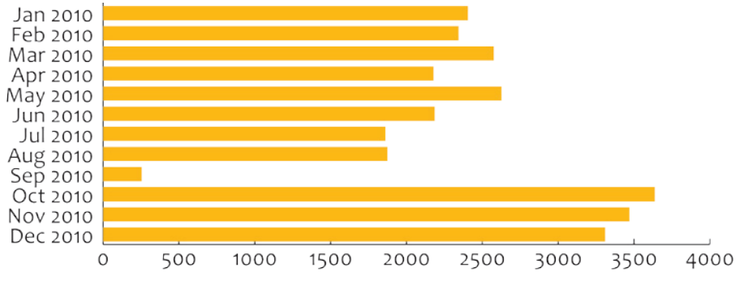
The homepage of the site shows all the latest news from the centre, while other sections provide further details about individual people and projects.

This year, a special effort has been made to make the entire content of this site available in each of the three languages in which it is published: **Catalan, Spanish and English**.

Readers of the ICP site come from all over the world, but visits from **Catalonia and the rest of Spain** account for over 60% of pages visited. However, 25% of views are from **the USA**, 2% from **France** and 1% each from **Germany, China, Belarus, Netherlands and Japan**.

2010 also saw the launch of **four new spaces** on the website to promote special programmes and conferences: the International Symposium on Paleohistology, the II Workshop on Conservation, the XXVII Congress de la Sociedad Española de Paleontologia, and the Crusafont Year.

Visitors to the website ICP



Month	Visitors	Number of visits	Pages
Jan 2010	2,406	3,873	19,488
Feb 2010	2,345	3,614	22,308
Mar 2010	2,577	3,946	26,677
Apr 2010	2,179	3,365	27,346
May 2010	2,627	4,407	33,552
Jun 2010	2,187	3,738	30,332
Jul 2010	1,862	3,441	20,592
Aug 2010	1,876	3,298	14,108
Sep 2010	2,560	4,392	26,268
Oct 2010	3,639	6,003	43,7
Nov 2010	3,471	5,8	32,364
Dec 2010	3,311	5,565	46,287
Total	31,04	51,442	343,022

The ICP website receives more than 3,000 visits per month, with significant and sustained growth in the last months.

The *DC2* publishes a monthly ICP newsletter which includes the most important news from the preceding weeks. In December 2010 this newsletter had 441 subscribers in Catalan, with an additional 40 in Spanish from October onwards, when newsletter was also launched in that language.

The number of subscribers grew by 35% during 2010.

The ICP on everyone's lips

Communication via Social Media

In the age of the Internet a communication and outreach strategy must be supported by up-to-date information on the social networks. To do this, the *DC2* has continued to promote the ICP Facebook page, while also planning a wider social media action.

The ICP already has 1,500 followers!

Departament of Projects

Laila Pilgren
Head of Projects

The departament of Projects of the ICP, created in September 2007, concentrates on attracting financial resources and selecting the most suitable financing funds for each ICP research project, both nationally and internationally.

With regard to grants, the Projects department is in charge of finding national and international financial assistance so that the researchers can opt for th e various awards offered by public and private bodies around the world. The department revises the entirety of requirements established in the various funding announcements and communicates these to the researchers. Thus, total compliance with the stipulated mode and deadline is guaranteed.

During 2010 there have been various important projects carried out by the ICP researchers and managed by the projects department. The projects range from solving technical deficiencies at the collection´s inventory, creating networks with other centres with views on attracting quality tourism, multiple diggings, redesigning the museum exhibitions, congresses and symposia, publishing books and even creating a videogame for teenagers.

On the more scientific aspect it has been the year in which two new research groups have been created thanks to the Spanish Science Ministry which will receive funding for the next three years. Many of our researchers have also obtained scholarships for stays abroad. Places like New York, Paris, Basel and London have been the cities chosen by our researchers to obtain a wider experience and international contacts, which will undoubtedly help them in their career.

The project´s department´s role has been to solve any administrative queries and to support the researchers with the technical aspects of the paperwork involved in any one of these projects, thus leaving them more time to do what they do best: research!

PROJECTS 2010

I. GENERALITAT DE CATALUNYA

- **Departament de Cultura, Patrimoni cultural.**

Aid granted to Laura Celià´s project to solve technical defficiencies of the collection´s inventory files. Amount: 8.000 euros.

Aid granted to Àngel Galobart and Teresa Esquirol for their project "Terra de Dinosaures", within the museum´s collaboration program. Amount: 5.000 Euros.

Project granted to Sandra Val for the conservation and restoration of the cultural heritage of the B-40 motorway. Amount: 5.500 Euros.

Project granted to Joan Madurell to carry out a paleontological intervention in Incarcal, within the bianual research projects 2010-2011. Amount granted: 13.092 Euros.

Project granted to David M. Alba to carry out a paleontological intervention at Can Llobateres. Granted amount: 22.414 Euros.

Project granted to Àngel Galobart and Josep Fortuny to carry out a paleontological intervention at a Catalan Triasic area within the bianual research projects 2010-2011. Granted amount: 6.167 Euros.

Project granted to Àngel Galobart and Josep Marmi to carry out a paleontological intervention at Plantes relating Mesozoic within the bianual research projects 2010-2011. Granted amount: 3.738 Euros.

Project granted to Àngel Galobart to carry out a paleontological intervention at Molí del Baró within the bianual research projects 2010-2011. Granted amount: 5.092 Euros.

Project granted to Àngel Galobart and Bernat Vila to carry out a paleontological intervention at Sapeira within the bianual research projects 2010-2011. Granted amount: 2.273 Euros.

Project granted to Àngel Galobart to carry out a paleontological intervention at Bastús within the bianual research projects 2010-2011. Granted amount: 5.446 Euros.

Project granted to Àngel Galobart to carry out a paleontological prospecting at "Afloraments del Cretaci Superior de Catalunya" within the bianual research projects 2010-2011. Granted amount: 2.843 Euros.

Project granted to Enric Menéndez for the purchase of cabins for fossils at the Espai Miquel Crusafont. Total amount: 14.536 Euros.

Project granted to Laura Celià for the remodelling of the Espai Miquel Crusafont. Total amount: 14.536 Euros.

Comissionat per a Universitats i Recerca

Grant obtained by Laura Celià with her project "Explicar ciència al públic amb discapacitats". Amount: 3.000 Euros.

Grant obtained by Alícia Montes for her project "Back in Time: Una aventura paleontològica". Amount: 5.000 Euros.

II. MINISTERIO DE CIENCIA E INNOVACIÓN

Within the non-guided fundamental research project´s call, our proposal "Devolviendo los fósiles a la vida: una aproximación multidisciplinar a la paleobiología de los pequeños mamíferos miocenos de la península Ibérica" with Isaac Casanovas and Daniel de Miguel as principal investigators was chosen to be granted for 3 years. Total amount: 121.000€.

Within the non-guided fundamental research project´s call, our proposal "Estrategias de life-history en primates: efectos de la dieta y la estacionalidad en los cambios morfológicos ontogénicos y la eficiencia funcional en simios simpátricos y homínidos" with Gabriele Macho and Xavi Jordana as principal investigators was chosen to be granted for 3 years. Total amount: 193.600€.

The "Fundación Española para la Ciencia y la Tecnología (FECYT)", granted Laura Celià 20.000€ for her project "Proyecto de divulgación social de la investigación en paleontología". Reference: FCT-10-1632. Total: 20.000 euros.

Grant approved within the complementary actions for non-guided fundamental research projects for the organization of the "International Symposium on Paleohistology" by Meike Köhler. Amount: 18.000€.

Grant approved within the complementary actions for non-guided fundamental research projects for the organization of the "Jornadas de la Sociedad Española de Paleontologia -Paleobiología: nuevos conceptos y nuevos métodos-" Salvador Moyà Solà.. Amount: 4.000€.

III. INTERNATIONAL

Grant from the National Geographic Society to David M. Alba for his research and digging project "New Paleontological Excavations at the late Miocene Hominoid-bearing site of Can Llobateres 1 (Vallès-Penedès Basin, Catalonia, Spain). The amount obtained is $15.000.

GRANTS

I. GENERALITAT DE CATALUNYA

Agència de Gestió d'Ajuts Universitaris i de Recerca (AGAUR)

BE grant to Judit Marigó for a one month stay at the Naturhistorisches Museum, Basel, Switzerland.

PIV grant (for visiting professors and researchers) SM063752, granted to bring Marc Godinot for 15 days stay at our institution.

II. MINISTERIO DE CIENCIA E INNOVACIÓN

Juan de la Cierva JCI-2010-08241 fellowship, obtained by Isaac Casanovas. Total: 25.250 per year. Length: 3 years.

Juan de la Cierva JCI-2010-08157 fellowship, obtained by Xavier Jordana. Total: 25.250 per year. Length: 3 years.

FPI short stays: granted to Miriam Pérez de los Ríos, for a 3 months stay at the National Museum of Kenya.

FPI short stays: granted to Arnau Bolet for a 2 months stay at the American Museum of Natural History of New York, USA.

III. GOBIERNO DE ARAGÓN

- **Departamento de Ciencia, Tecnología y Universidad**

Grant for the researcher´s mobility granted to Daniel de Miguel for a period of 6 months (8.053 Euros).

IV. UNIÓ EUROPEA

Synthesys Grant, obtained by Josep Fortuny, for a 13 days stay at the Nationalmuseet, København, Dinamarca.

Scientific Production

3.1 GRANTS, PROJECTS AND CONTRACTS AWARDED IN 2010

Grants

"Juan de la Cierva JCI-2010-08241", from the Ministry of Science and Education. Post-doctoral contract awarded to Isaac Casanovas-Vilar, part of the project: "Great apes (Hominoidea) from the Miocene of the Mediterranean region: origin, evolution and palaeobiology." Duration: 2011-2013.

"Juan de la Cierva", awarded to Jordana, X. within the framework of the Programa Nacional de Contratación e incorporación de RRHH (National recruitment and placement of Human Resources), Ministry of Science and Innovation (2010).

"Beca FI" from the Generalitat de Catalunya (2010-2013) awarded to Judith Marigó for the Institut Català de Paleontologia from February 2010.

"Estancias Breves" from the Ministry of Science and Innovation: Awarded to Pérez de los Ríos, M. (2010): Destination: Kenya National Museum (Nairobi, Kenya). Associated to the project: "Great apes (Hominoidea) from the Miocene of the Mediterranean region: origin, evolution and palaeobiology".

"Estancias Breves" from the Ministry of Science and Innovation: Awarded to Pérez de los Ríos, M. Destination: Natural History Museum, Paris (France). Associated to the project: "Great apes (Hominoidea) from the Miocene of the Mediterranean region: origin, evolution and palaeobiology".

"Estancias Breves" from the Ministry of Science and Innovation: Awarded to Bolet, A. Destination: University College London. February 1 to April 2.

"Estancias Breves" from the Ministry of Science and Innovation: Awarded to Marmi, J. Destination: Université Claude Bernard Lyon I, Lyon. November 1-14.

"Estancias Breves" from the Ministry of Science and Innovation: Awarded to Cartanya, J. (Collaborator associated to the Mesozoic Research Group): Natural History Museum, London. June 15-18.

"Synthesis grant" awarded to Fortuny, J. for the project "Walking and Feeding with temnospondyls", carried out at the Natural History Museum, Paris (March). Coordinator: Dr. Sebastien Steyer.

"Synthesis grant" awarded to Judit Marigó by the Natural History Museum, Paris. Project entitled: "Comparison between Eocene Adapoidea (Primates) from the Iberian Peninsula and the FR-TAF collections". March 2010.

"Synthesis grant", awarded to Jordana, X. Destination: Natural History Museum, Paris. Project entitled: Forearm pronation efficiency analysis in Hominoids (2010).

Projects awarded in 2010

BRINGING FOSSILS TO LIFE: A MULTIDISCIPLINARY APPROXIMATION OF THE PALAEOBIOLOGY OF SMALL MIOCENE MAMMALS FROM THE IBERIAN PENINSULA. Principal investigator: I. Casanovas Vilar. Funded by the MICIN. Subsidy awarded: 150,000 Euros. Number of researchers: 6. Duration: 2010-2013.

THE VERTEBRATE BEARING PALAEOGENE OUTCROPS OF CATALONIA (2010-2013). Written by Dr. Salvador Moyà Solà, Dr. Raef Minwer-Barakat, Judit Marigó-Cortés and Imma Roig-Secall, from the Palaeoprimatology and Human Evolution group at the ICP. Project involving Jordi Galindo as part of the research team as the Curator of palaeontological deposits and sites at the ICP.

LIFE HISTORY STRATEGIES IN PRIMATES: THE EFFECTS OF DIET AND SEASONALITY ON ONTOGENETIC MORPHOLOGICAL CHANGE AND FUNCTIONAL EFFICIENCY IN SYMPATRIC GREAT APES AND FOSSIL HOMININS. Ministry of Science and Innovation, project awarded to Gabrielle A. Macho (principal investigator). Quantity 160,000€ plus 36,000€ costs awarded.

NEW PALEONTOLOGICAL EXCAVATIONS AT THE LATE MIOCENE HOMINOID-BEARING SITE OF CAN LLOBATERES 1 (VALLÈS-PENEDÈS BASIN, CATALONIA, SPAIN). Principal investigator: David M. Alba, funded by the National Geographic Society. 2010. Quantity: 10,000 € (approx.).

NEW PALEONTOLOGICAL EXCAVATIONS AT THE LATE MIOCENE HOMINOID-BEARING SITE OF CAN LLOBATERES 1 (VALLÈS-PENEDÈS BASIN, CATALONIA, SPAIN). 2010-2013, Principal investigator: David M. Alba, presented to the Archaeological and Palaeontological Survey of the Generalitat de Catalunya within the framework of palaeontological actions. Duration: 2010-2013. Quantity: Subsidy demanded for the years 2009 and 2010 from the Generalitat de Catalunya. 20,000 Euros.

PALAEONTOLOGICAL RESEARCH SOCIAL SCIENCE COMMUNICATION PROJECT. Spanish foundation for science and technology (FECYT/MICINN). The technical report of the project was written by Laura Celià Gelabert, with the involvement of Jordi Galindo as scientific assessor for the Neogene and Quaternary, and Marta March for design and illustration.

Projects involving ICP researchers

GLOBAL WARMING AND MAMMAL DIVERSITY: A TEST OF THE EFFECT OF CLIMATE CHANGE FROM THE FOSSIL RECORD. Principal investigator: M.T. Alberdi. Subsidy awarded: 100,000 Euros. Number of researchers: 8. Duration: October 1, 2010 to September 30, 2013.

PROSPECTION AND EXCAVATION OF THE TORIL-3A AND NOMBREVILLA-9 DEPOSITS FROM THE TORIL-NOMBREVILLA PROFILE (CALATAYUD-TERUEL BASIN). MUNICIPAL DISTRICTS OF DAROCA AND NOMBREVILLA (ZARAGOZA). Principal investigator: Daniel De Miguel (ICP), B. Azanza (Zaragoza University) and M. Salesa (Museo Nacional de Ciencias Naturales-CSIC). Subsidy awarded: 7,500 Euros. Duration: August 18 - September 8, 2010.

Contracts

Budget for the preparation of a group of 42 fossil remains found at Can Filuà by the company GEOTERNA, S.L. 26,100 €.

Budget for the preparation of a group of 42 fossil remains found at Vallparadís by the company GEOTERNA, S.L. 17,400 €.

Budget for the finishing of a large clutch of dinosaur eggs from Coll de Nargó, funded by the Culture Department of the Generalitat de Catalunya. 9,920 €.

Budget for the NATURAL SCIENCES MUSEUM (MCNB), BARCELONA – Zoology Museum for the restoration of the FIN WHALE exhibited at the MCNB, and which will be exhibited in the museum building of the New Science Museum at the FORUM in Barcelona. 46,400 €.

Budget for the NATURAL SCIENCES MUSEUM (MCNB), BARCELONA – Geology Museum for the preparation of a group of fossil remains from the exhibition to be moved to the new Museum at the FORUM. 8,260 €.

Budget for the NATURAL SCIENCES MUSEUM (MCNB), BARCELONA – Zoology Museum for the restoration of the fractured cranium of the FIN WHALE exhibited at the MCNB, and which will be exhibited in the museum building of the New Science Museum at the FORUM in Barcelona. 53,360 €.

Budget for the NATURAL SCIENCES MUSEUM (MCNB), BARCELONA – Zoology Museum to make a copy of a Myotragus cranium and its mandible: 1,180€.

Budget for the preparation of fossil material found by the company FOSSILIA, SL at the action on the B-40: 21,240€.

Subsidies

Subsidy awarded by the Generalitat de Catalunya for the Preparation-Preservation of fossil material from the B-40: 8,260€.

Subsidy requested from the Department of Culture and Communication in order to contract a documentary maker. Quantity awarded: 8,000€.

Subsidy requested from the Department of Culture and Communication for the remodelling of the collection spaces. Quantity awarded: 14,536€.

Social science communication project for FECYT palaeontology research. Objective: to obtain funding for the subcontraction of monitors for teaching activities. Quantity awarded: 20,000€.

Exhibition remodelling project. Generalitat de Catalunya, Culture and Media Department. Objective: to get funding to change the exhibition. Quantity awarded: 14,536 €

Accessibility Project for promotion of research. Generalitat de Catalunya, Ministry of Universities and Research (AGAUR), ACDC call. Objective: to promote palaeontological research among

3.2. ACTIVE RESEARCH PROJECTS

visually impaired children. Quantity awarded: 3,000 €.

ICP projects

The current active projects of the ICP are the following:

BRINGING FOSSILS TO LIFE: A MULTIDISCIPLINARY APPROXIMATION OF THE PALAEOBIOLOGY OF SMALL MIOCENE MAMMALS FROM THE IBERIAN PENINSULA. Dependent on the Ministry of Science and Innovation, years 2011-2013 CGL2010-21672 (sub-programme BTE). Funding: 150,000 Euros. Principal investigator: Dr. Isaac Casanovas Vilar.

PALAEONTOLOGICAL RESEARCH SOCIAL SCIENCE COMMUNICATION PROJECT. Dependent on the FECYT, 2010. FCT-10-1632, Funding: 20,000 Euros. Principal investigator: Laura Celià (Institut Català de Paleontologia). Co-researchers: Xavier Jordana, Nekane Marín, Meike Köhler & Rubén García-Martínez.

THE VERTEBRATE BEARING PALAEOGENE OUTCROPS OF CATALONIA (2010-2013). Written by Dr. Salvador Moyà Solà, Dr. Raef Minwer-Barakat, Judit Marigó-Cortés and Imma Roig-Secall, from the Palaeoprimatology and Human Evolution group at the ICP. Project involving Jordi Galindo as part of the research team as the Curator of palaeontological deposits and sites at the ICP.

THE VERTEBTRATE BEARING TRIASSIC OUTCROPS OF CATALONIA. 2008-2011. Project presented to the Area of Research and Knowledge of the Department of Heritage, Culture Department of the Generalitat de Catalunya. Directed by Dr. Àngel Galobart, Josep Fortuny and Dr. Bernat Vila.

THE PALAEONTOLOGICAL DEPOSITS OF THE PALAEOGENE/CRETACEOUS TRANSITION IN THE CATALAN PRE-PYRENEES: SYSTEMATICS, PALAEOECOLOGY AND PALAEOBIOGEOGRAPHIC IMPLICATIONS 2007-2011. Project presented to the Area of Research and Knowledge of the Department of Heritage, Culture Department of the Generalitat de Catalunya. Directed by Dr. Àngel Galobart.

PALAEONTOLOGICAL STUDY ON THE PLIO-PLEISTOCENE OF THE BANYOLES-BESALÚ BASIN: RESEARCH PROJECT 2009-2012. Madurell-Malapeira, J.

STUDY OF FOSSILISED EGGS AND EGGSHELLS AND FOSSIL FROM THE ÓRZOLA DEPOSIT (LANZAROTE). Dependent on Cabildo Insular de Lanzarote. Funding: 5,000 Euros. Principal investigator: Dr. Antonio Sánchez.

DINOSAUR EVOLUTION IN EASTERN IBERIA, AND SURROUNDINGS, DURING THE CRETACEOUS: SYSTEMATICS AND PALAEOBIOLOGICAL AND PALAEOECOLOGICAL INFERENCES. Dependent on the Ministry of Science and Innovation, years 2009-2011. CGL2008-06533-C03-01/BTE, Funding: 58,000 Euros. Principal investigator: Galobart, À.

GREAT APES (HOMINOIDEA) FROM THE MIOCENE OF THE MEDITERRANEAN REGION: ORIGIN, EVOLUTION AND PALAEOBIOLOGY. Funded by the Ministry of Science and Innovation, years 2009-2011, CGL2008-00325/BTE. Funding: 100,000 €. Principal investigator: Prof. Salvador Moyà-Solà.

PALAEOPRIMATOLOGY AND HUMAN PALAEONTOLOGY RESEARCH GROUP. 2009 SGR 754. Dependent on the AGAUR, Department of Innovation, Universities and Enterprise, Generalitat de Catalunya. Funding: 45,760 Euros. Principal investigator: Prof. Salvador Moyà-Solà.

BIOLOGICAL ANTHROPOLOGY RESEARCH GROUP (GREAB). Generalitat de Catalunya: AGAUR (2009SGR566), 45,000 Euros, 2009 to 2014. Principal investigator: Pilar Aluja (Universitat Autònoma de Barcelona); ICP researchers: Xavier Jordana.

IBERIAN DINOSAUR TRACK PROJECT IN COLLABORATION WITH THE UNIVERSITY OF MANCHESTER (UK). Laser digitalisation of the 11 sites with dinosaur trace fossils on the Iberian Peninsula included in the application for being UNESCO Natural Heritage Sites. Researchers: Àngel Galobart, Bernat Vila, Albert Garcia Sellés, Arnau Bolet.

INFOREGIÓ PROJECT (2009 REGIÓ 00011), "VIRTUAL PALEONTOLOGY: DIGITALISATION AND INTERACTION WITH FOSSILS". In collaboration with the 'Modelling, Visualisation, Interaction and Virtual Reality Research Group' (MOVING) from the Polytechnic University of Catalonia (UPC) and the company 'Tangent'.

THE EVOLUTION OF LIFE HISTORY PATTERNS IN FOSSIL AND RECENT ISLAND AND CONTINENTAL MAMMALS: a comparative study. I+D CAICYT CGL2008-06204/BTE Ministry of Science and Education, years 2008-2011. Funding 96,800 Euros. Principal investigator: Meike Köhler (Institut Català de Paleontologia). Co-researchers: Moyà-Solà, S.; Rook, L.; Celià Gelabert, L.; Sander, M.; Garcia Martínez, R.; Palombo, M. R.; Kaiser, Th.; De Esteban Trivigno, C. S.

LIFE HISTORY STRATEGIES IN PRIMATES: THE EFFECTS OF DIET AND SEASONALITY ON ONTOGENETIC MORPHOLOGICAL CHANGE AND FUNCTIONAL EFFICIENCY IN SYMPATRIC GREAT APES AND FOSSIL HOMININS. Ministry of Science and Innovation, years 2010-2013. CGL2010-20868, Funding 160,000 Euros. Principal investigator: Dr. Gabriele Macho (Institut Català de Paleontologia). Co-researchers: Lee-Thorp, J.A., Jordana, X., Galtés, J., Warren, Y. & Wang, W.

MOLLUSCAT: CONTINENTAL MOLLUSCS OF CATALONIA, of the Grup de Malacofauna Continental de Catalunya of the Associació Catalana de Malacologia (ACM). Funded by the ACM. Years: 2004-present.

NEW PALEONTOLOGICAL EXCAVATIONS AT THE LATE MIOCENE HOMINOID-BEARING SITE OF CAN LLOBATERES 1 (VALLES-PENEDÈS BASIN, CATALONIA, SPAIN). Funded by the Culture Department of the Generalitat de Catalunya and the National Geographic Society. Funding: 22,414 Euros. Principal investigator: Dr. David M. Alba.

PALAEONTOLOGY OF VERTEBRATES FROM THE BANYOLES-BESALÚ BASIN: 2010-2014. Dependent on the Culture Department of the Generalitat de Catalunya Funding: 13,092 Euros. Principal investigator: Dr. Joan Madurell-Malapeira.

PROSPECCIÓN Y EXCAVACIÓN PALEONTOLÓGICA EN LOS YACIMIENTOS TORIL-3A Y NOMBREVILLA-9 DEL PERFIL DE TORIL-NOMBREVILLA (CUENCA DE CALATAYUD-TERUEL). TÉRMINOS MUNICIPALES DE DAROCA Y NOMBREVILLA (ZARAGOZA)." Depenent de la Diputación General de Aragón. Funding: 7.500 Euros. Investigadors Principals: Daniel DeMiguel, Beatriz Azanza and Manuel Salesa.

PROYECTO DE DIVULGACIÓN SOCIAL DE LA INVESTIGACION EN PALEONTOLOGIA. Fundación española para la ciencia y la tecnología (FECYT/MICINN). La memòria tècnica del projecte ha estat redactada per Laura Celià Gelabert, and en el qual Jordi Galindo forma part en qualitat d'assessor científic del Neògen and Quaternari, and Marta March en el disseny and il·lustració. Anys: 2010-2011.

RECOGNITION OF THE "MESOZOIC RESEARCH GROUP" as a Unique Research Group by the Agència de Gestió d'Ajuts Universitaris and de Recerca for the period 2009-2013. Principal investigator: Galobart, À.

Projects involving the participation of ICP researchers

EFFECTS OF INSULARITY, MIGRATION AND CULTURE ON THE EVOLUTION OF THE HUMAN POPULATION OF MENORCA II: FROM THE PRE-TALAYOTIC TO TALAYOTIC. Dependent on the Ministry of Science and Innovation, years 2009-2011. CGL2008-00800/BOS, Funding 81,400 Euros. Principal investigator: Dr. Assumpció Malgosa (Universitat Autònoma de Barcelona). Co-investigator: Xavier Jordana.

MULTIDISCIPLINARY APPROACH TO THE STUDY OF THE PEOPLING OF THE AZORES ISLANDS (PORTUGAL): CONTRIBUTIONS FROM SKELETAL AND GENETIC MARKERS. Acción Integrada Hispano-Portuguesa (E-114/08; HP2007-0047), 12,000 Euros, 1/01/2008 fins 31/06/2010, Principal investigator: Assumpció Malgosa (Universitat Autònoma de Barcelona), Manuela Lima (University of the Azores), ICP researchers: Xavier Jordana.

GLOBAL WARMING AND MAMMAL DIVERSITY. A TEST OF THE EFFECT OF CLIMATE CHANGE FROM THE FOSSIL RECORD. Dependent on the Ministry of Science and Innovation CGL-2010-19116 (sub-

3.3 PUBLICATIONS AND RESEARCH OUTCOMES

programme BTE). Funding: 100,000 Euros. Principal investigator: María Teresa Alberdi.

THE PUERTO DE LA CADENA PALAEONTOLOGICAL DEPOSIT (MURCIA). Dependent on the Fundación Séneca (CARM) 11891/PHCS/09. Funding: 71,200 Euros. Principal investigator: Miguel A. Mancheño Jiménez.

3.3.1. Publications 2010

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Publicacions	2007	2008	2009	2010
JOUR ART SCI	5	16	25	34
PROCEEDINGS SCI	3	8	12	12
SCI PUBLICATIONS	8	24	37	46
INTERNATIONAL JOURNALS	0	2	16	2
NATIONAL JOURNALS	4	19	10	21
PROCEEDINGS INT	11	10	13	11
PROCEEDINGS NAC	8	1	17	2
DISSEMINATION ARTICLES	3	5	6	16
BOOK/CHAPTERS	3	3	3	17
TOTAL Nº OF PUBLICA-CIONS	37	64	102	115

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Summary of publications

The following table shows the number of publications in 2010 and some productivity indices comparing this with previous years. The first thing that should be noted is the increased number of publications this year, both of articles published in journals in the Science Citation Index (SCI), and other categories.

The total number of papers published/accepted and submitted this year is 115. This figure indicates that the productivity per researcher is around 8 and also that, in relation to previous years, researcher productivity continues to grow.

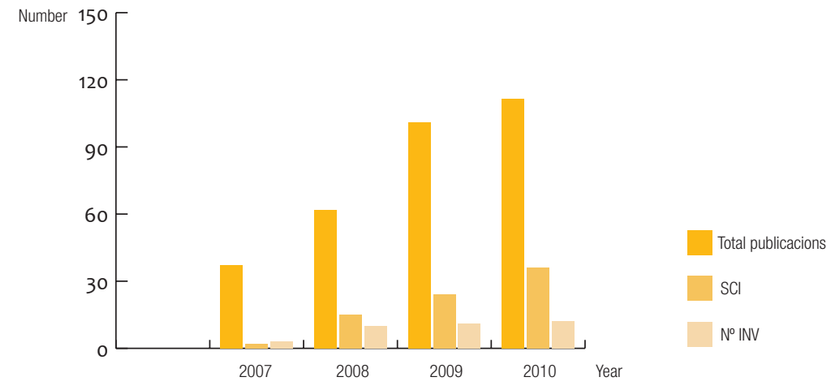
The same can be said of the results of different types of publications. As for papers in SCI journals, this year 34 articles and 12 proceedings have been published, a fact which implies an increase in productivity per researcher in relation to the previous year, from 1.9 to 2.3 SCI journal articles per researcher.

This year, the increase in number of researchers has been low, only rising from 13 to 15. But as can be seen the total number of publications, particularly in the SCI, has gone up sharply. The increase in productivity per researcher is due to several factors. Firstly, an improvement in the research infrastructure, such as laboratories and equipment, as well as an increase in the acquisition of competitive resources, and secondly, a good policy of group work and international collaboration.

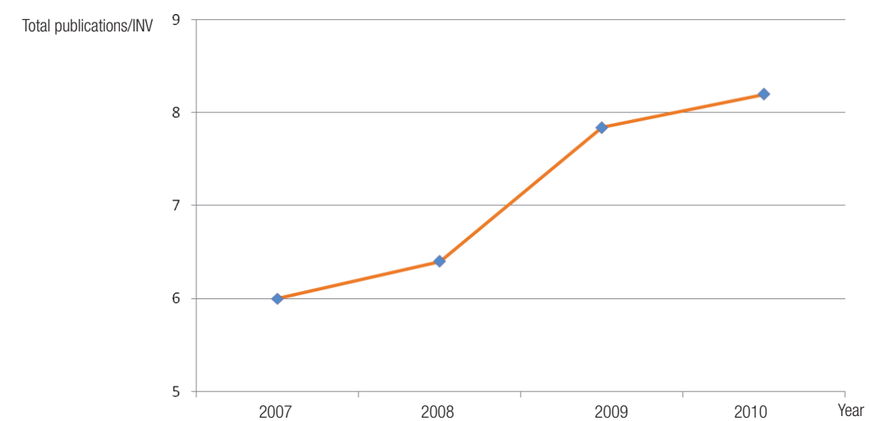
The quality and impact of the SCI journals in which the ICP published in 2010 was very high. Among these are journals with an impact factor of more than 10, such as the Proceedings of the National Academy of Sciences, USA, and journals with impact factors of around 3-4, including the American Journal of Physical Anthropology, the Journal of Human Evolution, the Journal of Vertebrate Paleontology, Paleontology, Quaternary International and the Journal of Zoology.

In addition, last year members of the ICP received three research awards. Firstly, M. Köhler won the Excellence in Rese-

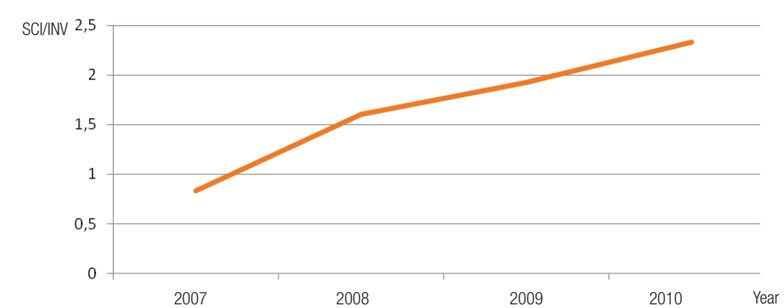
Relationship between publications per year and number of researchers



Average total publications per researcher per year



Average SCI publications per researcher per year



arch Award from the Universitat Autònoma de Barcelona (UAB), in the area of Experimental Sciences, secondly, the award for palaeontological research of the Dinopolis Foundation in Teruel was received, and the third prize was the Bartomeu Darder Award, given by the Natural History Society of the Balearics. All of the awards were for the innovative publication "Physiological and life history strategies of a fossil large mammal in a resource-limited environment", published by M. Köhler & Moyà-Solà, S., (2009) in the prestigious journal Proceedings of the National Academy of Science, PNAS, EEUU. Drs. Xavier Jordana, Raef Minwer-Barakat and Marc Furió gained the Premi Extraordinari de Doctorat for their respective theses.

3.3.2 External relationships/collaborations maintained during 2010

1.- As part of the MICIN project BRINGING FOSSILS TO LIFE: a multidisciplinary approximation of the palaeobiology of small Miocene mammals from the Iberian Peninsula IBÉRICACGL2010-21672 (sub-programme BTE) a collaboration was established with the following entities in order to achieve the research objectives of the project:

- University of Helsinki, Naturalis (Leiden),

- Cambridge University and the

National Museum of Natural Sciences (Madrid).

2.- Gabrielle Macho was a visiting professor in the Palaeoanthropology Division of Archaeological, Geographical and Environmental Sciences, University of Bradford.

3.- Human Evolution Research Center, Department of Integrative Biology / Museum of Vertebrate Zoology University of California, Berkeley, 3060 Valley Life Sciences Building, Berkeley (USA). The ICP collaborates with this institute through the project RHOI: REVEALING HOMINID ORIGINS INITIATIVE, funded by NSF-USA, an international multidisciplinary initiative that aims to throw light on the origin and early evolution of the Homindae family. 13 countries and more than 50 scientists, including 5 researchers from the ICP, take part in this project.

4.- Palaeontology Department and Earth Science Department, Florence University, via G. La Pira, 4, Florence (Italy). There is a close collaboration between the ICP and this department regarding the study of primate fossils from the continent of Europe and, particularly, Oreopithecus bambolii, an endemic island hominoid from Tuscany. The works is within the framework of the project "GREAT APES (HOMINOIDEA) FROM THE MIOCENE OF THE MEDITERRANEAN REGION: ORIGIN, EVOLUTION AND PALAEOBIOLOGY". HOPE. IP: S. Moyà-Solà, Ministry of Science and Education, CGL2006-04548/BTE. 2008-2011.

5.- Department of Earth Science, "La Sapienza" University, Rome (Italy). M. Rita Palombo. The collaboration with this department establishes common projects in relation to the study of fossil fauna from Mediterranean islands. This is within the project "THE EVOLUTION OF LIFE HISTORY PATTERNS IN FOSSIL AND RECENT ISLAND AND CONTINENTAL MAMMALS: A COMPARATIVE STUDY". Ministry of Science and Education, CGL2006-04548/BTE. 2008-2011.

6.- Institute of Palaeontology, University of Bonn, Germany. Dr. P. Martin Sander, Professor of Vertebrate Palaeontology (Bonn, Germany). This institute collaborates in palaeohistological studies on vertebrate fossils with the aim of inferring their palaeobiology. Part of the project "THE EVOLUTION OF LIFE HISTORY PATTERNS IN FOSSIL AND RECENT ISLAND AND CONTINENTAL MAMMALS: A COMPARATIVE STUDY". Ministry of Science and Education, CGL2006-04548/BTE. 2008-2011.

7.- Museum of Comparative Zoology Harvard University, (Cambridge, USA). Prof. Dr. R. Wrangham. We have a tight working relationship with this researcher from Harvard University, Cambridge, with respect to island evolution. (Köhler M., Moyà-Solà S. & Wrangham R. W. Island Rules cannot be broken (2008) Trends in Ecology and Evolution 23 (1): 7-8 (DOI:10.1016/j.tree.2007.10.002)).

8.- Peabody Museum of Archaeology and Ethnology Harvard University, (Cambridge, USA) Prof. David Pilbeam, Henry Ford II Professor of Social Sciences. The collaboration with this researcher and his group from Harvard is long-term, and currently a project has been designed to be presented at the National Science Foundation USA in order to carry out research comparing faunal changes during the Middle and Upper Miocene of Catalonia and Pakistan.

9.- Palaeontology Research Group in the School of Earth, Atmospheric and Environmental Sciences (SEAES) at the University of Manchester (England). Dr Phil Manning. The ICP collaborates with this department closely in two projects on the application of cutting-edge digitalisation technology of large structures applied to dinosaur trackways in Spain and Portugal. The projects involve the application of LiDAR, 3D Digital Mapping in the zone of Fumanya (Berguedà, Catalonia) and the Iberian Dinosaur Trackways Project.

10.- Georgian National Museum. Tbilisi (Georgia). The institutes collaborate in the study of the Neogene fauna of Georgia in two projects: "THE TWO IBERIAS. CLIMATIC CRISES AND FAUNAL EXCHANGE IN THE LATE NEOGENE OF THE WESTERN MEDITERRANEAN AND EASTERN PARATETHYS". International cooperation. Spain/Republic of Georgia.

11.- The Max-Plank Institute (Berlin, Germany), Dr. L. Demetrius. Collaboration into the mathematical analysis of evolutionary processes.

12.- Geology Department, Universitat Autònoma de Barcelona. Collaboration in a project on the Neogene basins of Morocco from a biostratigraphic viewpoint.

13.- Palaeontology Department, University of Lyon (France), Dr. P. Mein. Collaboration in the study of Neogene insectivore fauna.

14.- National Museum of Natural History Naturalis, (Leiden, Holland). Collaboration in the study of Neogene insectivore fauna.

15.- Montana State University, Department of Earth Sciences (Montana, USA). Dr. Franki Jackson. Collaboration in the study of dinosaur eggs and reproductive biology in egg clutches from the Mesozoic of Argentina and Catalonia.

16.- Department of Human Biology, Universitat Autònoma de Barcelona. Dr. A. Malgosa. Collaboration in the study of certain primate fossils.

17.- Palaeontology Department, Complutense University, Madrid

18.-Earth Sciences Department, Utrecht University, Utrecht, Holland. Cooperation with the Department of Neogene and Quaternary fauna.

19.- Academic Centre for Dentistry, Amsterdam (ACTA), Vrije Universiteit, Amsterdam (Holland). Collaboration with L. van Ruijven in the 3D analysis of micromammal teeth (J. A. Van Dam together with J. Fortuny from the ICP Virtual Palaeontology Research group).

20.- Asociación de Investigación Metalúrgica del Noroeste (AIMEN). The department of Virtual Palaeontology is collaborating in the construction of an industrial Computed Tomograph at the ICP.

21.- Department of Stratigraphy and Palaeontology, University of Granada, and the Geology (Palaeontology) department, University of Valencia. Collaboration in the biostratigraphic and palaeoenvironmental characterisation of different Miocene basins.

22.- Palaeobiology Department, Museo Nacional de Ciencias Naturales, Madrid (CSIC), and the Earth Sciences department, University of Zaragoza, within the framework of the projects "GLOBAL WARMING AND MAMMAL DIVERSITY: A TEST OF THE EFFECT OF CLIMATE CHANGE FROM THE FOSSIL RECORD ", of the Ministry of Science and Innovation CGL2010-19116/BTE, led by M.T. Alberdi, "Palaeontology, taphonomy and geomorphology of the pseudokarstic deposits of Cerro de los Batallones", of the Ministry of Science and Innovation CGL2008-005813-C02/BTE, led by J. Morales. These institutions also collaborate in the management of palaeontological actions in the Calatayud-Teruel basin (Zaragoza).

23.- Department of Geology and Geophysics, Università degli Studi di Bari "Aldo Moro", through the collaboration "Research on Cretaceous Dinosaurs". This agreement has led to the incorporation of Marco Petruzzelli into the Mesozoic research group for 6-8 months.

24.- Department of Palaeontology, Florence University (Italy), part of the project "Great apes (Hominoidea) from the Miocene of the Mediterranean region: origin, evolution and palaeobiology" of the Ministry of Science and Education CGL2006-04548 (BTE sub-programme), led by Moyà-Solà, S.

25.- Lower Permian excavations in Autun (France), led by Sebastien-Steyer, J. and Gand, G., with the participation of Fortuny, J.

26.- Faculty of Geology, Universitat de Barcelona, in the project "Great apes (Hominoidea) from the Miocene of the Mediterranean region: origin, evolution and palaeobiology", of the Ministry of Science and Education CGL2006-04548 (BTE sub-programme), led by S. Moyà-Solà. Collaboration with members of the department of Stratigraphy, Palaeontology and Marine Geosciences in the study and bio- and magnetostratigraphic characterisation of Neogene sediments from the Vallès-Penedès basin. Further collaboration in the project "Climatic control (orbital) in continental and shallow marine sediments", of the Ministry of Science and Innovation CGL2010-17479, involving Garcés, M.

27.- Dinópolis Foundation (Teruel), collaboration in various palaeontological prospection and excavation campaigns as part of the project "Palaeontological excavations in the Roma 2 deposit in Alfambra (Teruel)" 230/08/09/2010, General Management of Cultural Heritage, led by L. Alcalá, L. and Alberdi, M.T.

28.- Hospital Mutua, Terrassa: Collaboration agreement with the Virtual Palaeontology department to carry out computerised axial tomography (CAT).

29.- Institut de Paleoecologia Humana and Evolució Social (Universitat Rovira i Virgili, Tarragona) and the Department of Palaeontology, Complutense University, Madrid. Collaboration in the study of microinvertebrate fauna and palaeoenvironmental inference from different deposits, such as Orce (Granada), Almenara-Casablanca (Castellon) and Dmanisi.

30.- Museo Arqueológico Municipal de Cartagena and the Department of Stratigraphy, Palaeontology and Marine Geosciences, Universitat de Barcelona. Collaboration within the framework of the "Proyecto Cueva Victoria", of the Cultural Council of the Murcia Region and the Sierra Minera Consortium, led by Gibert, L. and Ferrández, A.

31.- National Archaeological Museum of Spain (Madrid). Collaboration as part of the project "Magdaleniense en el Sur del Duero. La Peña de Estebanvela (Ayllón, Segovia)" CyL-IA-40.024.0002.01, of the CSIC and the Culture and Tourism Council of the Government of Castille and León, led by Caho, C. and López, P.

32.- Friulian Museum of Natural History, through a collaboration agreement for study into Triassic fauna from the Friuli-Venice-Julia localities (Italy).

33.- National Museum of Natural Sciences (Madrid), within the project "Bringing fossils to life: a multidisciplinary approximation of the palaeobiology of

small Miocene mammals from the Iberian Peninsula", of the Ministry of Science and Innovation CGL2010-21672 (BTE subprogramme), led by Casanovas-Vilar, I.

34.- Naturalis (Leiden, Holland), as part of the project "Bringing fossils to life: a multidisciplinary approximation of the palaeobiology of small Miocene mammals from the Iberian Peninsula", of the Ministry of Science and Innovation CGL2010-21672 (BTE sub-programme), led by Casanovas-Vilar, I.

35.- Norwegian Polar Institute (Oslo, Norway), as part of the project on the collection of dwarf reindeer (Rangifer platyrhynchus) from the island of Spitsbergen (principal investigator Aanes, R.), with the participation of the ICP department of Palaeobiology.

Cambridge University (UK), as a part of the project "Bringing fossils to life: a multidisciplinary approximation of the palaeobiology of small Miocene mammals from the Iberian Peninsula" of the Ministry of Science and Innovation CGL2010-21672 (BTE sub-programme), led by Casanovas-Vilar, I.

36.- Helsinki University (Finland), as a part of the project "Bringing fossils to life: a multidisciplinary approximation of the palaeobiology of small Miocene mammals from the Iberian Peninsula", of the Ministry of Science and Innovation CGL2010-21672 (BTE sub-programme), led by Casanovas-Vilar, I.

37.- Kent University (Canterbury, UK), in the research seminar "Bone morphology reflects behaviour….or does it?", in which Macho, G. participated as a guest.

38.- Polytechnic University of Catalonia (UPC). The department of Virtual Palaeontology works with engineers to carry out biomechanical simulations.

3.3.3. Conferences

Conference participation

IX Brook Human Evolution Workshop "Our Ancestors' Ancestors: the Miocene roots of the Hominin Tree", Turkana Basin Institute, Turkwel Research Station, Kenya.

Alba, D.M. (2010, invited speaker).

69th Annual Meeting of the Society of Vertebrate Paleontology (SVP). Pittsburg (USA), 10-13 October, 2010, organised by the Society of Vertebrate Paleontology.

International Palaeontological Congress (IPC3), London, 28 June – 3 July 2010.

Bolet, A., Evans, S.E. New Eocene squamate assemblages from Spain. (Comunicació oral)

Casanovas, I.

Fortuny, J., Marcé-Nogué, J., Gil, Ll. &Galobart, À. (2010). Biomechanical analysis in capitosaurs (Amphibia: Temnospondyli).

Biotic response to climate change – the cenozoic record. Staatliches Museum für Naturkunde Stuttgart, Stuttgart, Alemanya. Organitzat European Science Foundation.

Biotic response to climate change – the Cenozoic record. Held at the Staatliches Museum für Naturkunde Stuttgart, Stuttgart, Germany. Organised by the ESF (European Science Foundation).

Casanovas, I. 11-12 March 2010.

VIII Meeting for young palaeontological researchers. Held at Enciso, La Rioja. 21-24 April 2010. Casanovas, I., De Miguel, D., Sellés, A. G.,

Digital tools for 3D modelling in anatomy and evolution. Organised by the National Research Centre on Human Evolution (CENIEH), Burgos (Spain). May 2010.

De Miguel, D. and Marigó, J.

European Registrars Conference, Amsterdam. 7-8 November 2010.

Celià-Gelabert, L., Galindo, J. & March, M. How to find a needle in a haystack? Implementation of RFID as an improvement in the management of a scientific collection: the case of the Institut Català de Paleontologia.

Third international symposium on pterosaurs, 5-10 August 2010, Beijing, China.

Dalla Vecchia F.M., President of the 5th session (Functional morphology), with C. Palmer.

Annual Meeting of the Society for Molecular Biology and Evolution

Del Cerro, I., Marmi, J., Ferrando, A. & Bosch, M. (2010). Inferring the evolutionary history of Meles species: a bayesian approach from multilocus data. Abstracts of the Annual Meeting of the Society for Molecular Biology and Evolution, electronic publication.

The 8th International Conference on the Mesolithic in Europe. Santander, Spain.

Fontanals, M., Marín-Moratalla, N., Ruíz, J. & Subirà, M.E. (2010) Atlantic versus Mediterranean Mesolithic shell middens. An approach to the human diet from stable isotope analysis.

Symposium in Virtual Palaeontology, Utrecht (Holland), 17 December 2010.

Fortuny J. (2010). Digging in the lab: Digital tools for the study of vertebrate palaeontology.

3rd International Palaeontological Congress.

Fortuny, J., Marcé-Nogué, J., Gil, Ll. &Galobart, À. (2010). Biomechanical analysis in capitosaurs (Amphibia: Temnospondyli).

8th Meeting of the European Association of Vertebrate Palaeontologists.

Fortuny, J., Marcé-Nogué, J., Gil, Ll. & Galobart, À. (2010). Functional morphology in Temnospondyli, the most diverse group of early tetrapods. The 8th Annual meeting of European Association of Vertebrate Paleontology, Aix-en-Provence, France.

García-Martínez, R., Marín-Moratalla, N. & Köhler, M. (2010) Bone histology of extant rodents: assessing life history strategies.

Sellés, A.G. & Galobart, À. (2010). Cairanoolithid eggs from Pinyes site (Coll de Nargó area, Lleida Province, Spain): a preliminary review on its parataxonomic classification and implications. Abstract Volume: 75.

Perspectives on vertebrate evolution: topics and problems to celebrate the retirement of Prof. Armand de Ricqlès. 14-16 June, 2010, Collège de France, (Paris). Organisers: Jorge Cubo and Michel Laurin.

García-Martínez, R., Marín-Moratalla, N. & Köhler, M. (2010) The uniformity of growth across long bones of extant dormice: a histological approach. Perspectives on Vertebrate Evolution: Topics and Problems, Paris, France.

Jordana, X. & Köhler, M. (2010) What dental microstructure and eruption pattern tell us about life. Perspectives on Vertebrate Evolution: Topics and Problems, Paris, France.

Köhler, M., & Marín, N. Contribution of bone histology to understanding the evolution of life history strategies in continental and insular ecosystems - Perspectives for future research.

IX Congress of the Asociación de Demografía Histórica, 16 to 19 June 2010, Ponta Delgada, Azores.

Jordana, X., García, C., Armentano, N., Malgosa, A., Cunha, E. & Lima M. "Estudio paleodemográfico de la necrópolis del Convento de São Gonçalo (Angra do Heroísmo, Terceira, Azores)". Oral presentation.

Jordana, X., Malgosa, A. & Armentano, N., "Paleodemografía del Bronce final en Menorca: el enterramiento colectivo de la "Cova des Pas"".

7th Advanced Seminar on Palaeodiet, MacDonald Institute for Archaeological Research Cambridge, UK.

Macho, G., Lee-Thorp, J.A. & Warren, Y. (2010) Can gorilla dietary ecology provide insights into early hominin diets?

16th International Cave Bear Symposium. Azé, Saône-et-Loire (France), 22-26 September, 2010.

Madurell-Malapeira, J., Alba, D.M., Aurell-Garrido, J. & Moyà-Solà, S. Epivillafranchian remains of Ursus deningeri from the Iberian sites of Cal Guardiola and Vallparadís (Terrassa, Catalonia). (oral presentation).

Ninth International Congress of Vertebrate Palaeontology. Uruguay July 2010.

Martínez-Pérez, C., de Esteban Trivigno, S. & Botella, H. Geometric morphometric analysis of the early Devonian conodont genus. Polygnathus: a preliminary approach.

World of Mammoths.12-18 September 2010.

Madurell-Malapeira, J., Ros-Montoya, S., Alba, D.M., Aurell-Garrido, J. & Moyà-Solà, S. The first record of Elephas (Paleoloxodon) antiquus in Europe. Evidence from Cal Guardiola and Vallparadís (Terrassa, Catalonia, Spain).

17th International Congress of Unitas Malacologica World Congress of Malacology.

Malchus, N. 18-24 July 2010, Phuket, Thailand. Bivalve top hats – descriptive, ontogenetic and evolutionary perspectives.

XXIII Conference of the Francophone Primatological Society, 2010, Centre de la Baume-les-Aix, Aix-en-Provence, France.

Pérez de los Ríos, M., Moyà-Solà, S. & Alba, D.M. (2010). "Les sinus paranasaux comme un outil en phylogénie et taxonomie appliqué à Pierolapithecus catalaunicus)" [oral communication]

Migrations in the Past - Listening to Fossils. Calpe conference 2010.

Sánchez, A. Pleistocene ecological change and the evolution of bird migration systems. Gibraltar, 16-19 September.

15th International Bat Research Conference

Sevilla, P. & Furió, M. (2010). The Plio-Pleistocene bat fossils of the Almenara-Casablanca Complex: getting closer to a modern assemblage. (Comunicació oral).

3rd Annual Fossil Preparation Collections Symposium 2010. Field Museum, Chicago (USA):

Val, S., Cancelo, C. Vila, B. & Garcia-Sellés, A. PREPARATION OF DINOSAUR EGGSHELLS: NEW INSIGHTS TO TRADITIONAL TECHNIQUES.

International Primatological Society XXIII Congress Kyoto 2010. Kyoto (Japan), 12-18 September 2010, organised by the International Primatological Society.

VIII Meeting of young palaeontological researchers, Enciso (La Rioja, Spain), 21-24 April, 2010. Contributions:

Seventy-Ninth Annual Meeting of the American Association of Physical Anthropologists. Albuquerque, New Mexico (USA), 14-17 April, 2010, organised by the American Association of Physical Anthropology.

Conferences and meetings organised by the ICP

Geometric Morphometrics and Phylogeny. UAB. Professor: Dr. Christian Klingenberg. 7-9 April 2009.

II Conservation Workshop. Finding Global Solutions for Natural History Collections. From the site to the storage. The organisation of this began in January this year with Marta March and Jordi Galindo as part of the organising committee.

3.3.4. Organisation and participation in palaeontological actions

Alba, D.M. Director of the scheduled palaeontological action of preventative control, excavation and sampling at Can Llobateres 1 (Vallès-Penedès basin): June-July 2010.

Casanovas, I. Co-director of the actions at the Can Llobateres deposit (Sabadell) within the framework of the project "New paleontological excavations at the Late Miocene hominoid-bearing site of Can Llobateres 1 (Vallès-Penedès Basin, Catalonia, Spain)". The action was financed by the Generalitat de Catalunya, the National Geographic Society and the ICP. June-July 2010.

De Miguel, D. Palaeontological prospection and excavation campaign in the Toril-3A and the Nombrevilla-9 deposits from the Toril-Nombrevilla profile (Calatayud-Teruel basin). Daroca and Nombrevilla municipalities (Zaragoza). 18 August- 8 September 2010, with the participation of the ICP researchers I. Roig and A. Luján.

Furió, M. Participation in the excavation campaign at Dmanisi (Republic of Georgia). July, 2010.

Furió, M. Participation in the geological-palaeontological prospection campaign at the La Celia section (Jumilla, Murcia). June, 2010.

Galindo, J. Participation in the palaeontological excavation campaign, 19-20 July, at the Basturs Poble deposits (Isona and Conca de Dellà, Pallars Jussà).

Galobart, À. and Dalla Vecchia, F.M. The Upper Cretaceous "Molí del Baró" deposit (Isona and Conca Dellà, Pallars Jussà). 1-31 July.

Madurell, J. and Martínez-Navarro, B. Excavation management at the Incarcal palaeontological deposit (Crespià, Pla de l'Estany). Organised by the Neogene and Quaternary fauna research group of the ICP. Malchus, N. and Garcia-Sellés, A. Palaeontological prospections in the Upper Cretaceous outcrops (Berguedà, Pallars Jussà, Alt Urgell). May 1 to September 31.

Marmi, J. The Upper Cretaceous "Camí Nou" plant deposit (Isona and Conca Dellà, Pallars Jussà). 1 to 31 July.

Minwer-Barakat, R. Palaeontological action integrated into the research programme of Eocene Catalan Outcrops.

Moyà-Solà, S. Management of the Can Llobateres field campaign (Sabadell, Barcelona). Participation: Alba, D.M. and Casanovas, I. (Institut Català de Paleontologia).

Van Dam, J. Stratigraphic and geological fieldwork in the Teruel and La Celia basin.

Vila, B. Palaeontological prospections in the Pont d'Orrit and Sapeira and Les Avellanes-Canelles Reservoir (Pallars Jussà and La Noguera). 1 to 31 July.

3.3.5. Other activities of the research groups

Scientific committee and research institution members

Bolet, A. Organising committee for the course "Geometric Morphometrics and Phylogeny", UAB-ICP. 7-9 April, 2010.

Casanovas, I. Member of the NOW (Neogene of the Old World database of fossil mammals) advisory board since the beginning of 2010, relating to the taxonomy and ecomorphology of rodents and lagomorphs.

Casanovas, I. Member of the Vertebrate Paleontology Society and the International Paleontological Association.

Sánchez, A. Tribunal member of the XXIII "Jóvenes Investigadores" contest, 2010. Convened by the Ministry of Education.

Journal and research project reviewing

Alba, D.M. Estudios Geológicos.

Alba, D.M. Journal of Human Evolution.

Alba, D.M.Neues Jahrbuch fuer Geologie und Palaeontologie.

Alba, D.M., for the journals Estudios Geológicos, Journal of Human Evolution and Neues Jahrbuch für Geologie und Palaeontologie.

Casanovas, I. Reviewer for the journal Geobios (SCI).

Dalla Vecchia, F. M., for the journal Rivista Italiana di Paleontología e Stratigrafia (ISI) and for the Proceedings Volume "Bernissart/Early Cretaceous Terrestrial Ecosystems", Indiana University Press.

De Miguel, D., for the journal Cidaris.

Furió, M., for the journal Geobios.

Galobart, À. Agencia Nacional de Evaluación de Proyectos (ANEP) for the National Research and Development Plan (2009-2012).

Galobart, À., for the Agencia Nacional de Evaluación de Proyectos (ANEP), within the National Research and Development Plan (2009-2012).

Jordana, X., for the journals International Journal of Osteoarchaeology and the Revista de la Sociedad Española de Antropología Física.

Köhler, M., for the journals Comptes rendus Palevol of the Académie des Sciences, and Paleontologia i biologia evolutiva.

Macho, G. Acta Biomaterialia (3)

Macho, G. American Journal of Physical Anthropology (2)

Macho, G. Biological Journal of the Linnean Society (1)

Macho, G. Biotechnology and Biological Sciences Research Council, UK (2)

Macho, G. Folia Primatologica (1)

Macho, G. Journal of Anatomy (4)

Macho, G. Journal of Human Evolution (3)

Macho, G. National Research Foundation, South Africa (1)

Macho, G. Natural Environment Research Council, UK (1)

Macho, G. The Leverhulme Trust, UK (1)

Malchus, N. Agencia Nacional de Evaluación de Proyectos (ANEP) within the National Research and Development Plan (2009-2012).

Malchus, N. For the Journal of Paleontology (ISI), for the Agencia Nacional de Evaluación de Proyectos (ANEP), within the National Research and Development Plan (2009-2012), the revision of a book chapter "Bivalve seashells of the western North Pacific (new ed.)". Valentich-Scott, 2010. Philobryidae.

Malchus, N. Reviewer for the Journal of Paleontology (ISI).

Minwer-Barakat, R., for the journals Cidaris, Geobios and Quaternary International.

Sánchez, A., for the journal Archaeofauna, Revista Mexicana de Ciencias Geológicas.

Van Dam, J.A., for the journal Palaeogeography, Palaeoclimatology, Palaeoecology.

Vila, B., for the journal Ameghiniana.

Thesis, Masters and research project supervision

Alba, D.M. Supervisor for the doctoral thesis of Cheyenn Rotgers Mallo (in progress).

Alba, D.M. Supervisor for the doctoral thesis of Josep M. Robles Giménez (in progress).

Furió, M. Supervisor of the Intercampus (UB-UAB) palaeontology Masters research project for Guillem Pons-Monjo "Revisión del género Nesiotites (Soricidae, Mammalia) en las Islas Baleares (Mediterráneo Occidental)". Mark obtained: Honours.

Moyà-Solà, S. Supervisor of the Master's thesis of Pérez de los Ríos, M. "Descripción morfológica del esplacnocráneo de Pierolapithecus catalaunicus (Primates: Hominidae) y comparación con otros primates del Mioceno y actuales". Universitat Autònoma de Barcelona. Inter-university Masters of Palaeontology UAB-UB, June 2010.

Defence of doctoral theses, thesis reading, Diplomas and Masters

Alba, D.M. Member of the assessment tribunal for the Master in Palaeontology at the Universitat Autònoma de Barcelona and the Universitat de Barcelona. June 2010.

Dalla Vecchia, F.M. "Estudi tipològic de dents de Teròpode (Diapsida, Dinosauria) de la "Unitat roja inferior" de la Formació Tremp (Maastrichtià), Conca de Tremp (Espanya)" presented by Ferran Llorens.

Dalla Vecchia, F.M. Member of the assessment tribunal for the doctoral thesis presented by Bernat Vila "Los saurópodos del Cretácico Superior del sur de Europa: diversidad, icnología y biología reproductiva" at the Autonomous University of Madrid.

de Esteban Trivigno, S.: Masters project tribunal "Physics-Based 3D models for non-landmark morphometrics of soft tissues". Author: Chainarong Kesamoon.Masters programme: Erasmus world programme "MathMods". 7 September 2010.

Galobart, À. "An Early Jurassic (Upper Lias) Ichthyosaur from the Serra Carbonera near Alòs de Balaguer, Northern Spain", presented by Chloe Chambers.

Galobart, À. "Nova revisió de les restes de cocodril de Cretaci superior de Casa Fabà, Isona" presented by Daniel Llovera.

Galobart, À. "Revisión de las plumas fósiles de los yacimientos de calizas litográficas de la Sierra del Montsec (Lleida, España)" presented by Daniel Martín.

Galobart, À. Co-supervision of the doctoral thesis by Violeta Riera "Estudio integrado (geología y paleontología) de la sucesión de dinosaurios (Maastrichtiense) de la vertiente surpirenaica", which was awarded "Excellent cum laude". Read on June 11 at the Sala de Graus in the Faculty of Sciences at the Universitat Autònoma de Barcelona.

Galobart, À. Co-supervision of the doctoral thesis by Bernat Vila, "Los saurópodos del Cretácico superior del sur de Europa: Diversidad, icnología y biología reproductiva", which was awarded "Excellent cum laude". Read on the 18 June at the Palaeontology Unit of the Biology Department in the Autonomous University of Madrid.

Galobart, À. Supervision of the projects "Iniciació a la recerca and treball de final de Màster" worth 30 credits for the Official Inter-university Master in Palaeontology in 2009-2010. Projects presented at the Sala de Graus II in the Faculty of Science of the UAB, 22 June.

Köhler, M. Proposer of the doctoral thesis "Diversité microanatomique et histologique des os longs chez les tetrapodes: inferences paleobiologiques", read by Melle Aurore Canoville, and directed by Michel Laurin. Paris.

Research prizes received

Furió, M. "Premi Extraordinari de Doctorat" for the 2006-2007 course (Geology Department in the UAB). June 2010.

3.4. KNOWLEDGE TRANSFER

Jordana, X. "Premi extraordinari de Doctorat", BABVE Department, Universitat Autònoma de Barcelona.

Köhler, M. The Bartomeu Darder Award from the Societat d'Història Natural de les Balears, for the best nature contribution published in 2009 for the "Physiological and life history strategies of a fossil large mammal in a resource-limited environment".

Köhler, M. and Moyà-Solà, S. Premio Paleonturología 10 for the publication "Physiological and life history strategies of a fossil large mammal in a resource-limited environment."

Köhler, M. and Moyà-Solà, S. 2010 UAB Excellent researcher Award, for the publication "Physiological and life history strategies of a fossil large mammal in a resource-limited environment."

Teaching

Alba, D.M. Coordinator of the Vertebrate and Human Palaeobiology module on the Palaeontology Master at the Universitat Autònoma de Barcelona and Barcelona University: 2009-2010 and 2010-2011.

Alba, D.M. Member of the Commission for doctoral studies in Geology at the Universitat Autònoma de Barcelona: 2009-2010 and 2010-2011.

Alba, D.M. Lecturer on the Human evolution Module of the Master in Biology at the Universitat Autònoma de Barcelona and Barcelona University: 2009-2010 and 2010-2011.

Alba, D.M. Lecturer on the Vertebrate and Human Palaeobiology module on the Palaeontology Master at the Universitat Autònoma de Barcelona and Barcelona University: 2009-2010 and 2010-2011.

Alba, D.M. Speaker on "Els primats fòssils de l'Abocador de Can Mata". XI Jornades de geologia de Vila-real, Vila-real, organised by CEFIRE (Centre de Formació, Innovació i Recursos Educatius) of the Education Council of the Valencian Government, 27 November,2010.

Casanovas-Vilar, I., DeMiguel, D., Furió, M. and Van Dam, J. A. Lecturers on the Vertebrate and Human Palaeobiology module of the Palaeontology Master, given at the Universitat Autònoma de Barcelona and Barcelona University: 2009-2010 and 2010-2011.

Dalla Vecchia, F. M. Classes in the Vertebrate and Human Palaeobiology classes for doctoral students, within the 2010-2011 Masters programme at the Universitat Autònoma de Barcelona and Barcelona University, October 2010.

Galindo, J. Class "Les intervencions paleontològiques and els principals jaciments paleontològics de vertebrats de Catalunya", on the Vertebrate and Human Palaeobiology Master. Faculty of Science, Universitat Autònoma de Barcelona.

Galindo, J. Lecturer on the Master class "L'excavació paleontològica: adjurant d'Indiana Jones, la gestió del patrimoni paleontològic "in situ"". Faculty of Geography and History, Universitat de Barcelona.

Galindo, J., Celià, L. and Delclòs, X. Coordinators of Heritage class, on the Master of Cultural Heritage Management of the UB.

Galindo, J., Delclòs, X. and Celià, L. Joint coordination of the class "Arriba el gran moment, presentació dels fòssils en societat", presenting "Avaluació dels jaciments paleontològics musealitzats a Catalunya". Faculty of Geography and History, Universitat de Barcelona.

Galobart, À. Classes on the Vertebrate and Human Palaeobiology Module, for doctoral students, within the 2009-2010 Masters programme of the Universitat Autònoma de Barcelona and Barcelona University. January 2010.

Galobart, À. October 2010, classes on the Vertebrate and Human Palaeobiology Module, for doctoral students, within the 2010-2011 Masters programme of the Universitat Autònoma de Barcelona (UAB) and Barcelona University (UB).

Jordana, X. Lecturer on the course "Desenterrant silencis. Les Fosses de la Guerra Civil". Summer University of the UAB and UB.

Jordana, X. Lecturer on the official postgraduate courses "Màster en Biologia Humana" and "Màster en Paleontologia", given at the UB and UAB.

Köhler, M. "Màster en Paleontologia", given at the UAB.

Madurell-Malapeira, J. Guest lecturer on the science communication course "El llop ibèric", organised by the Signatus Naturalist Association at the Bagà educational centre, May 8 2010.

Marmi, J. Classes on the Vertebrate and Human Palaeobiology Module, for doctoral students, within the 2010-2011 Masters programme at the UAB and UB.

Marmi, J. Summer course lecturer at the UAB.

Minwer-Barakat, R. Lecturer on the Vertebrate and Human Palaeobiology Module, in the official inter-universitary Master in Palaeontology (UAB and UB): 2009-2010 and 2010-2011.

Moyà-Solà, S. "Màster en Paleontologia", given at the UAB.

Moyà-Solà, S. Lecturer on the Human evolution Module of the Master in Human Biology of the UAB and UB: 2009-2010 and 2010-2011.

Preservation and Preparation group: Collaboration in the Palaeontological Heritage course of the Master of Heritage of the UB, Faculty of History.

Science communication conferences

Science communication activities and talks

Casanovas-Vilar, I. Talk "El passat com a clau pel futur: la biodiversitat de la Mediterrània a través del temps". Alella, December 2, 2010.

Dalla Vecchia, F. M. Conference "Tethyshadros e Neptunidraco. La preistoria d'Italia". APPI Day 5, Centro S. Lorenzo, Alberi di Vigatto (Parma, Italy). Organised by APPI, Associazione Paleontologica Parmense Italiana. December 5.

Fortuny, J. Talk at the Natural History Museum of Paris "Biomechanical analysis of the capitosaur (Amphibia: Temnospondyli) skulls". March 2010.

Fortuny, J. Talk "La Terra abans dels dinosaures", within the "La Vall de Tost recorda" cycle of conferences. La Seu d'Urgell, December 2010.

Furió, M. Talk "2010 any de la biodiversitat: l'exemple de les musaranyes". Malgrat de Mar Cultural Centre, 17 November 2010.

Furió, M. Talk "El desconegut món de la Paleontologia: més enllà de trobar and excavar fòssils". IES La Sedeta (Barcelona), 27 May 2010.

Furió, M. Talk "La biodiversitat a vista de musaranya: resultats de 30 milions d'anys d'evolució en sorícids". Summer University, Institut de Ciències de l'Educació (UAB Campus), 15 July 2010.

Galindo, J. Conference "Els principals jaciments de vertebrats fòssils de Catalunya", organised by the Ateneu Juvenil, Cultural and Naturalista of Girona. 25 February.

Galindo, J. Conference "La importància del patrimoni paleontològic a Catalunya: els jaciments de vertebrats fòssils de l'Alt Urgell", organised by the Lo Riu Roig Association, within the "La Vall de Tost recorda" cycle of conferences. 3 December.

Galobart, À. and Vila, B. Presentation on the nest of dinosaur eggs from the Pinyes deposit at Palau Robert, with the participation of the counsellor for Innovation, Universities and Enterprise, Josep Huguet, and the director general of Cultural Heritage of the Department of Culture and Media, Jordi Roca.

Galobart, À. Talk "La fauna mesozoica dels Països catalans: una passejada per un mon sense l'home", Tartareu, 27 December 2010.

Garcia-Sellés, A. Conference "La reproducció dels Dinosaures: exemple de la niuada del Coll de Nargó", within the framework of the science communication talks of Science Week, 17 November 2010, M. Crusafont Museum, Sabadell.

Marmi, J. Conference "Un breu recorregut al llarg de la història de la vida" at the IES Guillem de Berguedà school (students of 1st of Bachillerat), Berga. 14 and 17 December.

Vila, B. and Marmi, J. Guided tour of the Fumanya deposit (Berguedà). Organised by the Ateneu Naturalista of Girona. 23 October.

Vila, B. Conference "Els Dinosaures cretacis dels Pirineus". Cycle of talks on fossils, Casa de Cultura of Girona. Organised by the Ateneu Naturalista of Girona. 19 February.

Vila, B. Interview on the TV programme "Divendres" on TV3 (Televisió de Catalunya).

Vila, B. and Galobart, À. Conference "Els dinosaures de Catalunya", at the Museu de la Ciència i de la Tècnica de Catalunya (mNactec), 25 February, Terrassa. Within the itinerant exhibition "Carbó i dinosaures".

Visits and exhibitions by the Preservation and Preparation area to exhibit the work of the laboratory. The company Touché has filmed a weekend Preparation workshop and various photographic reports on the processes carried out in the laboratory.

Courses attended

Course "Cladística: Métodos cuantitativos de clasificación y uso de TNT", given by P. Goloboff. National Museum of Natural Sciences, Madrid (Spain). Attended by Pérez de los Ríos, M. and Marigó, J.

"Geometric Morphometrics and Phylogeny". Institut Català de Paleontologia and the UAB. Attended by Pérez de los Ríos, M. and Marigó, J.

Training received

Celià, L. Doctoral thesis "El Patrimoni Paleontològic català. Anàlisi de la trajectòria històrica, estudi social and modelització com a eines de diagnosi d'un procés inacabat". Director: Dr. Llorenç Prats i Canals. UB.

Galindo, J. Master of Cultural Heritage Management. Universitat de Barcelona.

Organisation of and collaboration in exhibitions by members of the ICP.

Alba, D.M. Collaboration (at consultant level, as an investigator at the Institut Català de Paleontologia) in the new ex-

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