

Annual report

2010

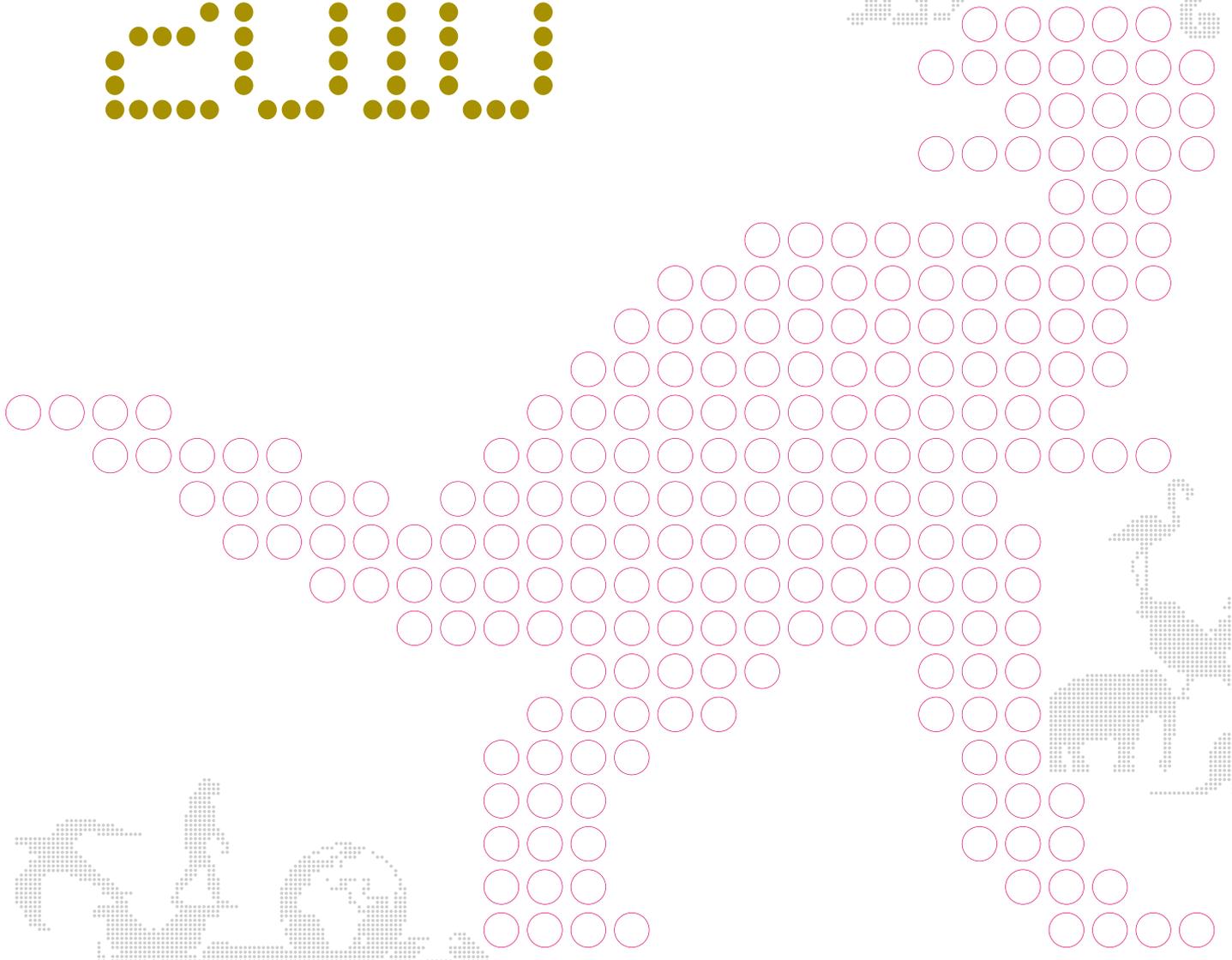


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Annual report

2010



Foreword

2010 was a special year in many respects.

The International Year of Biodiversity ended with a very positive outcome to the negotiations on the Convention on Biological Diversity (CBD), with 47 agreements signed in Nagoya. Multi-party action has borne fruit in this complex field, which requires a broad consensus and above all a global commitment.

The Institute was whole-heartedly involved in this UN-declared International Year, which focused on halting biodiversity loss. All of our divisions – Research, Collections, Museum, etc – contributed advice and expertise, informational and educational tools, and awareness-raising campaigns which sought to engage our fellow-citizens in the concrete and well-informed efforts. As Focal Point to the CBD, we were also actively involved in the Nagoya negotiations. We are proud and happy that in our own way and to the best of our abilities we have played a part in this important venture.

None of these additional activities have detracted from our scientific output. Publications remain at a high level. Digitisation of collections continues apace. The study of the collections has brought with it some surprises, from the date of domestication of dogs, to a Neanderthal baby. Masters and PhD students have been especially numerous this year, in both biology and palaeontology. The fertile and numerous links between the Institute and the universities spring from a mutual appreciation of our complementary roles. The Institute's role in providing expertise has also expanded,

in line with Belgium's environmental policy commitments, for example by carrying out environmental impact studies for offshore wind farms.

The renovation of the Museum is a long-term project. A good half of the programme has now been completed, and we hope over the next few years to set up the remaining elements: the key exhibitions on Humankind and its Evolution, on the Earth, and on Our Living Planet. The Museum's attendance has declined from the historic peak we experienced at the time of the reopening of the Dinosaur Gallery. But at the same time, our operations outside the Museum are growing dramatically. These now include a new player: the XperiLAB.be, a truck that offers the chance to experience practical science to those living in even the remotest areas of Belgium. The Museum reached out to over 600,000 people in 2010!

Paradoxically, however, our statutory staff are gradually decreasing in number, although the overall size of our workforce is increasing slightly. The average age of staff is now younger than before. It also contains a higher proportion of women, especially among the scientists. Producing new knowledge, sharing it and making it socially relevant would be impossible without the talents and motivation of all concerned. We need a streamlined, flexible and creative, and goal- and results-oriented organisation to underpin this work and create new opportunities. Will we see such an organisation come into being in 2011? It is my dearest wish.

Camille Pisani,
General director



RBINS research centre deals with most fields of natural science, from geology to zoology, and including palaeontology, molecular biology, oceanography and ecosystem studies. Our scientific findings add to knowledge about the diversity of our planet and of life, and are also an aid to policymaking and the management of natural resources from a sustainable development perspective.

Research



We present below some of the many projects carried out in 2010.



ANTHROPOLOGY AND PREHISTORY

Animal remains that shed light on human history

From the work of our archaeozoologists, we now know that part of the ancient city of Sagalassos (Turkey) was abandoned at the end of the sixth century. They were able to show that animal remains from the ruins of Roman baths are bones from owl pellets produced by the Eurasian eagle owl. As these animals rarely live alongside human beings, their presence at the site indicates that the baths were no longer in use at that time. Carbon-14 dating has enabled the event to be pinpointed in time. Analysis of other finds has also shown that the proportion of beef in the diet increased in times of peace and prosperity, while goats and sheep were eaten more during troubled times. There was therefore a link between changes in the inhabitants' food consumption patterns and the vagaries of political change. This ongoing research is part of a multidisciplinary study, funded by the Belgian Science Policy, which aims to throw light on the relationship between the social changes of late Antiquity and the early Middle Ages, and the economy and the environment.

SYSTEMATICS AND TAXONOMY

Further discoveries of new species!

Finding a new species is every biologist's dream, but it's quite a rare occurrence, especially for vertebrates. Nonetheless, last year one of our researchers identified no fewer than eight new mouse species! This year, our taxonomists have again discovered new species. Three of them were interested in a species of antelope, *Philantomba maxwelli*, which has a high degree of morphological variation depending on where it lives. By conducting morphological analyses and genetic research on specimens purchased at bushmeat markets and on skulls preserved in collections, they showed that the populations living in Togo, Benin and Nigeria are not part of the Maxwell's duiker species, but in fact constitute a separate species, which they have named *Philantomba walteri*. Moreover, field studies and genetic analysis of Museum specimens have also revealed the existence of a new species of caecilia (a legless amphibian) from Guyana. To celebrate the International Year of Biodiversity, it was named *Microcaecilia iyob* (*International Year Of Biodiversity*). Our invertebrate experts also added a few lines to the register of species, for example by identifying several dozen amphipods which were previously completely unknown.



15.I>7.2

Expedition to the Galapagos: sampling and cross-breeding of spiders and insects from the different islands shed new light on evolutionary mechanisms.

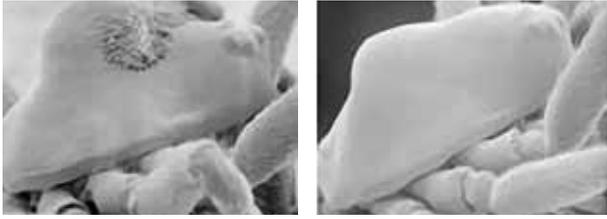
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Start of a study of human bones from a Gallo-Roman site at Jambes.

One species can hide a great many others

Eucypris virens, a tiny crustacean belonging to the Ostracod group, is widespread in this part of the world, and apparently well known. But where species are concerned, appearances can be deceptive! As part of a European project on the interactions between sexual and asexual reproduction, two of our zoologists began to analyse various genes of mitochondrial DNA from specimens of this species. When they performed a statistical analysis of genetic variations, they were greatly surprised to discover no fewer than 38 different clusters, in some cases very different from one other from a genetic viewpoint. For sexual individuals, pairing experiments confirmed the genetic analysis: males choose females from the same cluster. Moreover, the morphological differences do not overlap with the genetic differences. These are therefore what are known as 'cryptic species', where mere observation does not assist in determining if an individual belongs to one species or another. Never before have so many cryptic species been found behind a single known species. Our researchers are now trying to identify the evolutionary mechanisms which led to these speciations.

Research



ENTOMOLOGY

A bacterium that causes an unbalanced sex ratio

In most sexually reproducing species, females give birth to as many males as females. From an evolutionary viewpoint, this is the best strategy to ensure that genes from both parents are transmitted to the next generation. However, while studying the hunchbacked dwarf spider, *Oedothorax gibbosus*, our entomologists noticed that there were significantly more female births: something of a puzzle in evolutionary terms. Working in collaboration with the University of Ghent, they conducted breeding experiments and molecular analyses. These revealed that females of the species *Oedothorax gibbosus* infected with the bacterium *Wolbachia* produce more daughters than uninfected females. The crucial point is that *Wolbachia* reproduces by infesting the spider's eggs. Without eggs, there would be no bacteria! Males are therefore useless to it. Male embryos are killed by the bacteria, leaving more nutrients for young females which will one day produce the eggs that the bacterium needs. This phenomenon had already been described in other invertebrates, but this is the first time that it has been demonstrated in spiders. This discovery confirms the theory of the 50:50 sex ratio.



February

In Nigeria, RBINS studies the dispersal and evolution of the population of two endangered species: the Dama gazelle and the Addax antelope.



18.3

The first 44,900 copies of '366 gestes pour la biodiversité/366 tips voor de biodiversiteit' run out, and the book is sent for reprinting.

Geology for sustainable development

The work of assembling reliable scientific data as a basis for sustainable management of natural mineral resources addresses an important need for our future. The GECO project (*Geology for an ECONomic sustainable development*) – funded by the FPS for Foreign Affairs – was set up to respond to this need in the case of the province of Katanga in the Democratic Republic of Congo. Using a Raman microspectrometer, acquired in 2008, our geologists and those of the Royal Museum for Central Africa have identified the physical and chemical characteristics of copper and cobalt ores from various sources and thrown some light on the processes by which they were formed. They have also studied the opportunities for alternative economic activities open to local people in the extraction of other materials, such as limestone, clay or gravel, which could be used locally, especially in construction. This research has led to the creation of a widely available database, made up of a geological map of Katanga, showing mines, ores mined and infrastructure, a topographical ground survey and a map of the river system. In addition, analysis of vegetation cover maps from different periods, correlated with ground surveys, has helped with the evaluation of the negative impact of mines and the human settlements around them on the biodiversity of this region.



MARINE ECOSYSTEM MANAGEMENT

Sensitivity of marine ecosystems to invasive species

Ensis directus, the American jack-knife clam, was accidentally introduced into the waters of the North Sea and has proliferated to such an extent that billions of specimens are washed up on our beaches. How has this bivalve acclimatised to our waters? What is its impact on the sediment and the communities associated with it? With funding from the Belgian Science Policy, the department in charge of studying the North Sea is seeking to answer these questions in collaboration with other marine research centres in Belgium and the Netherlands. The data collected will be correlated with the physico-chemical characteristics of the environment to determine the preferred habitat of this new species, and its impact on macrofauna and predators will be analysed. The project also has a potential economic spin-off. *Ensis directus* is already sold and enjoyed in some European countries, such as Spain and the Netherlands. Given its ability to proliferate, this species could be commercialised in our waters too, but it is important under this heading to analyse the potentially high impact of this form of fishery on the rest of the ecosystem. To be continued...



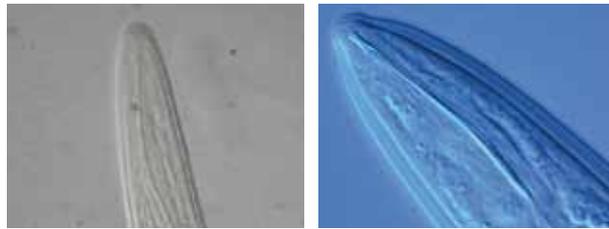
30.3

RBINS receives its first star
as an ecodynamic enterprise.

ENTOMOLOGY

An indigenous mosquito suspected of transmitting malaria

What could be more common than a mosquito? Yet some kinds of mosquito – fortunately very few – can transmit diseases such as malaria and meningitis. The *Anopheles* are a case in point. In the course of the MODIRISK project, funded by the Belgian Science Policy, a particular mosquito caught the attention of our entomologists: *Anopheles plumbeus*. This indigenous insect was previously considered rare and to be found in woodland where the larvae developed in the stagnant water in the forks of trees. Its numbers have now exploded in the vicinity of farms. Disused slurry tanks have provided ideal places for its larvae to incubate. Could this increase in numbers have an effect on public health? Part of the answer appeared by chance at the end of 2010, when a person living in Hainaut contracted malaria despite not having travelled to a country at risk. Not very far away, on the other hand, two travellers had brought the disease back from a country where it is present. It is therefore possible that a native mosquito – most probably *Anopheles plumbeus* – acted as a vector for the disease. An interesting theory requiring further investigation.



RECENT INVERTEBRATES

Taxonomists to the rescue of agriculture

Plants can be affected by viruses that are transmitted by certain nematodes – tiny roundworms that live in the soil. Only two families of nematodes, Longidoridae and Trichodoridae, are implicated in this problem. With their thorn-like teeth they bite the roots of plants and transmit the viruses to them. Most agricultural crops are susceptible. To protect against and treat such viral infections, it is necessary to identify precisely which species are vectors of the viruses, in order to obtain a correct diagnosis and implement an appropriate and environmentally friendly plan to address the problem. The work is made particularly difficult by the fact that the carrier species do not differ greatly from non-carrier species. Internationally renowned specialists in this field – our own taxonomists and some Spanish and Portuguese colleagues – have managed to uniquely characterise the different species and to develop a reliable identification key listing the morphological characteristics and DNA sequences that distinguish one from another. An example of how basic taxonomic research can be of significant value to agriculture!



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31.3

Falcons for everyone! At the foot of Brussels Cathedral, 22,000 people watch the birth and early days of some baby peregrine falcons.

15-16.4

Launch of EuroGeoSource: a European system for information provision and policy support for sustainable supplies of energy and mineral resources.

BIOLOGICAL EVALUATION

Regeneration of a nature reserve in the Ardennes

In 2010, the northern emerald dragonfly (*Somatochlora arctica*) was once again observed in the Chi Fontaine nature reserve. Hearsay? Not at all! It is the result of fifteen years of collaboration between our conservation biologists, Natagora, which owns the site, and the Janssens-Theys Foundation. Chi Fontaine was originally covered with sphagnum moss, but had been planted with spruces. Only a few open spaces retained traces of the original peat bog environment. After analysing the site's characteristics, our researchers suggested various actions, including cutting down the spruces and blocking up drainage ditches. They set targets for the area of bog to be regenerated and made predictions about the return of species. The proposed measures produced results quickly. The environment reverted to bog in less than three years. Many plants have returned, including rare species such as orchids and bog asphodel. The cranberry fritillary, an endangered species of butterfly, has subsequently returned to the site. Numbers of scarce emerald damselfly and common redpoll have increased. The final objective was achieved when the northern emerald dragonfly returned. Management measures based on a thorough knowledge of species ecology have thus helped recreate a safe haven for delicate, rare and endangered species in Europe.



MARINE ECOSYSTEM MANAGEMENT

The ecological impact of offshore wind turbines

The European Commission's climate action plan requires Belgium to increase its renewable energy output from the current 3.8% to 13% by 2020. This explains the importance attached to installing wind turbines in the North Sea. However it is important to respect the marine environment. The companies concerned are therefore required to carry out environmental monitoring over a six-year period. This monitoring is currently being carried out by the Department of Marine Ecosystem Management in collaboration with the University of Ghent, INBO and ILVO. Studying the physical characteristics of the environment, they have demonstrated that water turbidity is stable. By contrast, they showed that the construction of the bases of the wind turbines generated very high sound levels which were likely to temporarily disturb marine mammals. More surprisingly, they have also noted an overall increase in the abundance of ecosystems. For example, 29,000 bib were counted at the base of a single turbine! The turbines therefore create an attractive niche for marine life. Monitoring enables the operation of the turbines to be adapted to take account of its environmental impact. Along with more focused research, it will also enrich our understanding of the impact of coastal wind farms, in order to help with developing appropriate policies and ensure optimal management and design of future parks.



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26.4 > 12.6

Congo 2010. Researchers from the Institute set out on an expedition on the River Congo to gain a better understanding of biodiversity in the region.



1.5 > 31.10

A Mosasaurus skull, the pride of our palaeontological collections, is exhibited at the Shanghai World Expo.

Reference centre for biodiversity

Protecting and restoring the diversity of living organisms as a vital resource for sustainable development needs to be on policymakers' agendas more than ever. Through the Science Policy, Belgium has established two bodies which are working towards this goal: the Belgian Focal Point to the Convention on Biological Diversity (CBD) and the Belgian Biodiversity Platform.

The Institute was designated as the Focal Point in 1995, so 2010, which was declared the International Year of Biodiversity, was a crucial year for us. As well as coordinating the programme of activities, described later, our experts played an active part in the political negotiations at the conference in Nagoya for countries that have signed the convention. At the same time, we continued our partnerships with developing countries, largely financed by the Belgian Development Cooperation. In particular, the Focal Point hosted twelve trainees from seven countries for taxonomy and collection management study visits, and organised three training sessions on developing websites related to the Clearing House Mechanism (CHM), which CBD signatory countries are required to install in order to ensure information exchange and scientific and technical cooperation. It has also funded field training in Peru, Vietnam and Ethiopia (in taxonomy) and in the Democratic Republic of Congo (in habitat dynamics), and has supported seven projects for the technical reinforcement of the CHM in Benin, Guinea,



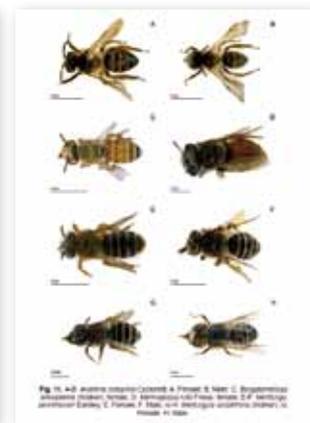
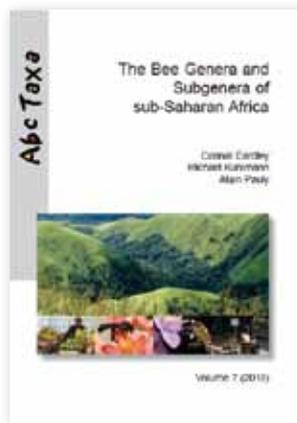
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Burundi, Cameroon, Burkina Faso and Madagascar and four awareness-raising projects on biodiversity in Burundi, Cameroon, the Democratic Republic of Congo and Benin. Finally, continuing its work under the Global Taxonomy Initiative, the Focal Point has published three volumes of *Abc Taxa*, a series of specialist manuals on good practices in taxonomic research and collections management. Two volumes relate to bees from sub-Saharan Africa, and the third is on inventory techniques.

In addition, through our hosting of the Belgian Biodiversity Platform we provide privileged access to primary data on biodiversity and encourage interdisciplinary cooperation between scientists, while serving as an interface between researchers and science policymakers. Among other things,

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22.5

The Museum receives a special mention during the European Museum of the Year Award.

the Platform continued with the work of creating a portal site and a networked database on the flora and fauna of Antarctica (AntaBIF). It studied the main problems relating to ecosystem services in Belgium and the question of their assessment, in order to advise the authorities on research priorities and policy actions to be undertaken in this area (BEES). Through its extensive involvement in European projects, it also helped create a network of integrated data and knowledge on fresh water diversity (BioFresh).



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© Patrick Gijssbers, Wikipedia



24.5

The modern taxonomy course begins at the Institute as part of the EDIT (European Distributed Institute of Taxonomy).



June

The 4,200 pieces of the Warlet minerals collection swell the Institute's collections.



We have numerous collections: books, photographs, databases, and of course our 37 million specimens. This constitutes a heritage which must be preserved, catalogued, made accessible and studied tirelessly, as new approaches and more sophisticated technology enable us to draw unexpected information from it.

Collections



A new life for the Transylvanian brown slug

Specimens on which the description of a new species is based are known as type-specimens. They constitute the international reference for that species. In view of their exceptional importance, they are preserved with special care. Researchers from around the world return to them regularly to carry out further research, particularly of a genetic nature, since DNA can be extracted and characterised from material in very poor condition. But despite this it can sometimes happen that a type-specimen is lost or destroyed. What happens then? This was the predicament of our researchers who wished to re-study the type-specimen of the Transylvanian brown slug (*Arion transsylvanus*), which was described in 1885, but for which the type-specimens were thought to be lost. In collaboration with several German museum curators, they managed to find a type-specimen in the collections of a museum in Dresden. Despite its desiccated condition, they were able to identify a nucleotide sequence from two fragments of mitochondrial DNA in the sample. *Arion transsylvanus* was unambiguously diagnosed as a well-defined taxon and can now be studied once again. This shows how old collections can still be a source of new scientific data.



A reference site for Belgian species

How can you gain an idea of what animal, plant and fungi species are currently present in Belgium? Since 20 May 2010, all you need to do is visit www.species.be, an easy-to-consult site which brings together the most recent research-based information in a standardised format. 32,500 species are already listed on the site. For most of them, the scientific name and common name and details of geographical distribution, frequency and habitat are given. The entire site is lavishly illustrated. By the end of 2010, nearly 16,000 people had already used the site to improve their knowledge of the biodiversity of our country. The site's users were predominantly Belgian (70%), consisting of researchers, policymakers, students, journalists and nature-lovers, but Internet users from a hundred other countries also visited the site.

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12



13 > 25.6

At Pompeii, on the basis of plant remains found in two bakeries, our archaeologists show how this activity was integrated into the economy of the city.



7.7

4,095 people attend the Bee Festival. Tastings, demonstrations and music all help raise awareness about the role of pollinators in nature and in our lives.

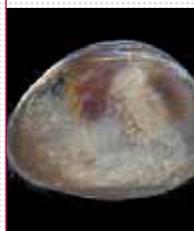
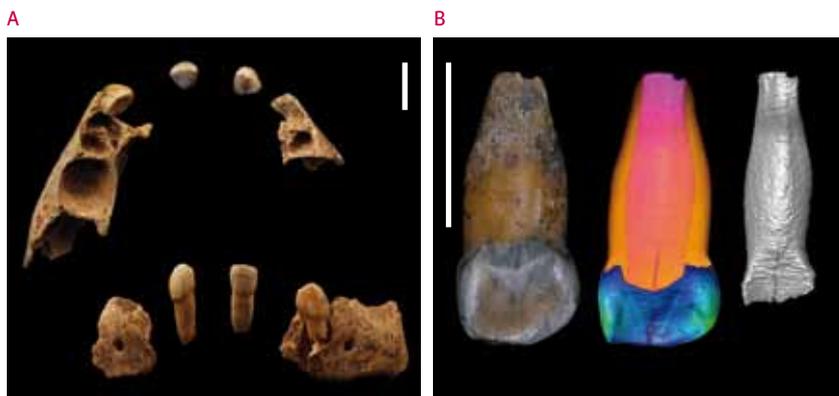
New data on the Neanderthals from Spy



Domestication from Palaeolithic times onwards?

The dog is the first animal to have been domesticated. This event undoubtedly had a profound influence on the organisation of human groups, which explains its recurrent interest to researchers. While morphological and genetic studies have clearly shown that dogs are descended from wolves, there is still uncertainty about the period in which they became domesticated. Many archaeologists locate the event at the end of the Palaeolithic era, 14,000 years ago. There are nonetheless certain factors which cast doubt on this. The paw prints of a large canine walking alongside a child were discovered in the Chauvet Cave in France, and found to be 26,000 years old. In addition, genetic analyses suggest that domestication took place at an earlier date. In order to explore this question in more depth, one of our palaeontologists, working with a Russian researcher, carried out osteometric tests on the skulls of fossilised canines from the Goyet site, preserved in our collections. These bones were compared with the skulls of prehistoric dogs from a Russian site (Eliseevichi), and a reference collection composed of skulls of modern wolves and dogs. In the light of this study, it appears that the skull from Goyet is clearly distinct from the skulls of modern wolves, and is very close to those of prehistoric dogs in terms of teeth, shape of the muzzle, and cranial capacity. But it dates from 31,700 years ago! This is a major discovery which could set the date for domestication of dogs over 15,000 years earlier than was previously thought.

Over the years, our collection of Neanderthals has acquired an international reputation. American researchers recently studied the microfossils found in deposits on the teeth of Spy I and II. They showed that Neanderthals were not exclusively carnivores, as previously believed, but that they also ate the rhizomes of aquatic plants, which are very rich in energy. Furthermore, when sorting through the collection of animal remains found in the excavated material from the Spy cave, our palaeoanthropologists discovered two fragments of jaw and four teeth belonging to a Neanderthal baby (A). In view of the rarity of fossils of this type, this was a remarkable discovery. Funding from the Belgian Science Policy enabled us to learn more. To begin with, Carbon-14 dating confirmed the age that had been given for the two adults: the finds date back to 36,000 years ago. Analysis of the baby teeth by microtomography (B) also revealed that despite the young age of the child – about a year and a half – he had already some marked Neanderthal characteristics: quantities of dentine and dental pulp which were proportionately greater than in anatomically modern humans. This finding indicates that some Neanderthal traits appeared at a very early developmental stage, while others, such as the supraorbital rim, only appeared at a much more advanced age.



10.7

The little son of two Institute researchers discovers by accident an European ostracod in the Kimberley region... in Australia.



(Almost) all Belgian Neolithic art finally catalogued

Ornaments, pierced teeth, decorated antlers, Venus figurines... nearly 90% of all portable Neolithic art in Belgium is kept at the Institute. They come mainly from the Dupont excavations (late nineteenth century). Up until now they have not been very well documented, but the job has now been done: all items have been catalogued, photographed and added to the MARS computer platform, a shared server accessible to researchers. This essential preliminary step will be followed in the future by renewed study of the pieces. Digitising each item (surface scanning and microscanning) will help us ensure the conservation of this very fragile heritage, and some of the copies can be put on display.

Studying habitat dynamics using photographic archives

We have an extensive photographic library, original maps and hundreds of publications about the Democratic Republic of Congo (and more specifically about Virunga, Upemba and Garamba National Parks). These archives



were derived from expeditions to the former Belgian Congo made between 1933 and the 1960s. They have been classified and digitised, and now serve as a reference base for the fauna and flora of that time: a 'zero state' predating most of the recent major human disturbances against which comparisons can be made to assess the current situation (through harvests) and determine habitat dynamics in these regions. In this capacity, they are used for training park rangers. A copy of the digital archive has been given to the Congolese Institute for the Conservation of Nature, and complete sets of the publications have been presented to the University of Kinshasa, the Documentation Centre for Higher and University Education and Research in Kinshasa and to the University of Lubumbashi, to mark the 50th anniversary of independence in the Congo.

An open-source management system

For a museum, collecting and conserving is not enough: collections must be made accessible, and this requires accurate, complete and easy-to-consult inventories and catalogues. This is one of the ICT service's roles. While continuing the work of digitising and cataloguing the collections that has already been started, the service has asked the different users of the collection databases to analyse their practices and needs. Thanks to this rigorous approach, it has been able to create a new, more user-friendly interface: DaRWIn2. For the entirety of this project, funded by the Belgian Science Policy, the ICT service has chosen to use open-source software whose codes are available on the Internet. This choice encourages information-sharing with the user community but also aims to stimulate external collaboration in order to improve the software. Some museums have already expressed an interest. This philosophy of openness and exchange is already being applied in the creation of most of the IT systems that we develop.



30.7

www.marinemammals.be
– the Belgian database on marine mammals (RBINS / University of Liège) – goes online.



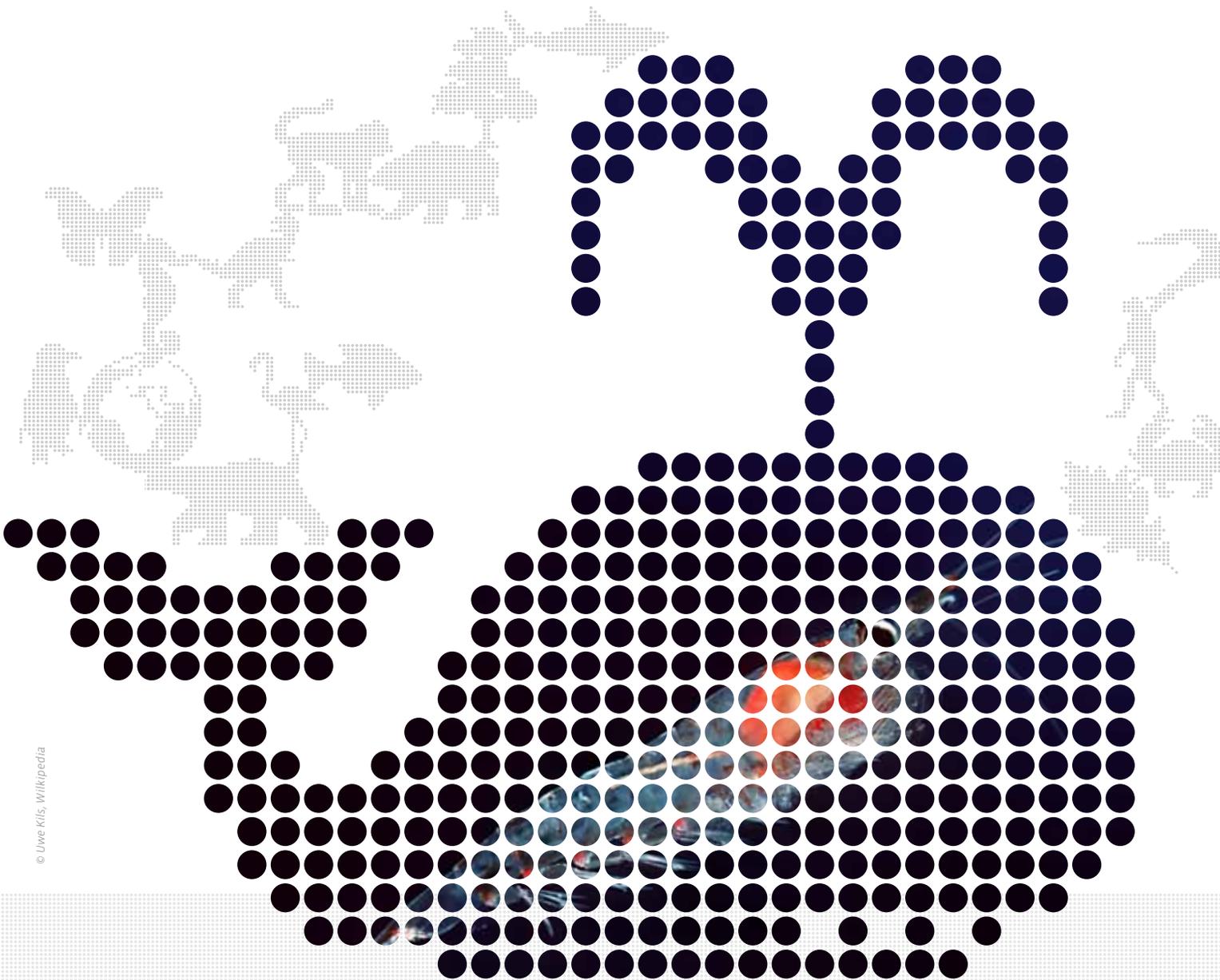
31.8

Less than three years after its reopening and the inauguration of the Dinosaur Gallery, the Museum welcomes its millionth visitor.



An institution that does not move with the times dies. Here at the Museum we understand this. Last year we saw the opening of a new permanent gallery, a new temporary exhibition, and new activities. In addition, we have reached a wide public in Belgium and abroad through our activities beyond the walls of the Museum.

Museum





BiodiverCITY, a new permanent gallery on urban biodiversity

The renovation of the Museum is continuing, room by room. With BiodiverCITY, we have taken the first step towards what will ultimately become the Biodiversity Wing, consisting of more than 2,500 m² of permanent galleries where we will redeploy our collections of preserved specimens. This first exhibition, on urban biodiversity, is both educational in that it presents the environment that visitors know best, but also strategic in that it shows the direct impact of our daily lives on the environment and offers concrete ways of taking action. Since an element of entertainment is indispensable to learning, the exhibition includes games, multimedia kiosks, films and collections. Visitors to the exhibition have been delighted, and we received 13,782 visitors in the last three weeks of December alone.

A dive into the world of cetaceans

The renovation of our permanent galleries does not prevent us from offering our public a programme of varied temporary exhibitions characterised by high scientific and presentation standards. From October 2009 to August 2010, visitors were invited to take the plunge and discover whales and dolphins. This interactive exhibition, created by the National Museum of Natural History (Paris) and supplemented by a

special Belgian section, was an opportunity to explain the evolution of marine mammals, to show how they live and have adapted to the aquatic environment and to educate the public about the problems which increasingly threaten the survival of cetaceans. The exhibition was a great success, with nearly 120,000 visitors in ten months!

Exhibitions outside the Museum

Our exhibitions also live on outside the walls. 'Murder in the Museum' captivated the public at the Science Space in Rennes, drawing 35,000 visitors in a four-and-a-half month period – 50% higher than the usual attendance. The exhibition/investigation then continued its success at the *Forum départemental des Sciences* in Villeneuve d'Ascq from September 2010. The exhibition 'Survivors of the X-TREME', based in the Pavilion of Knowledge in Lisbon between October 2009 and August 2010, was visited by 175,000 people. Alongside these large-scale exhibitions, our Brussels Nature Education Centre also creates exhibition-workshops. This year, a new 'BiodiverCity' workshop looked at biodiversity in the context of our daily lives. Launched on 31 March, it has already helped 108 groups representing a total of 2,093 schoolchildren aged between 6 and 12 to recognise, appreciate and protect the biodiversity of cities more effectively.



6 > 10.9

The RBINS observation aircraft takes part in the *Tour d'Horizon* flight programme for four days: nine instances of oil pollution are observed.

New educational 'made in Museum' games



Participate in an Educational Service activity, and you can expect personalised, friendly and competent guidance, as nearly 50,000 children and teenagers have experienced this year. Far from resting on its laurels, the Service has used its creativity to expand the programme on offer. For the very youngest children, staff have created a puppet theatre. Under the fascinated eyes of the children, dinosaurs, workers from the Bernissart mine and Professor Dino interact and tell a story: a poetical and amusing way of preparing the children before they enter the Dinosaur Gallery. For older children, two games based on board games have been developed, one on biodiversity (9-14 years), the other on evolution (16-18 years). They are a dynamic and active way of approaching these two very conceptual themes, for which the observation of specimens and experimentation that are usual to workshops are not enough. For the first of these games, the aim is simple: to create a garden which is as (bio)diverse as possible. Through play and discussion, children come to understand what biodiversity is, and discover the importance of links between species and even the concept of ecosystem resilience. The Evolution game features animal populations that experience the uncertainties of evolution through successive rolls of the dice. Caught up in the game's various challenges and tasks, students are exposed to all the ideas presented in the Evolution Gallery... and a little more besides. These games complement the gallery experience, gently ensuring that the concepts presented there are taken in and remembered. This novel approach seems to go down well with teachers and students alike: a nice incentive to develop new games in the near future, including one on classification.

Travelling experiments

In 2010, the Education Service also acquired an entirely new teaching tool, developed with the support of the Foundation Enterprise/Institute and the engaged sponsorship of Solvay. This was XperiLAB.be, a mobile laboratory housed in a convertible semi-trailer. This vehicle travels around the country visiting schools (10-14 years), fairs and various events related to science popularisation in order to raise young people's awareness of the scientific method. During a session, young people become budding scientists, observing, experimenting and inferring, in biology, chemistry, physics and technology. XperiLAB.be was an instant success with the school community: in two months the bookings calendar for the school year 2010-2011 was filled, with a waiting list covering most of 2011-2012. After less than three months on the road, the vehicle had received 2,753 young people.



9.9

The XperiLAB.be science vehicle is launched, enabling young people to perform chemistry, biology and physics experiments.



21.9

The Royal Zoological Society of Antwerp gives the Institute over 1,000 stuffed animals.



A virtual doubling of the number of events hosted

Chris Watson, David Attenborough's sound engineer, proved a big success at the Museum with his presentation of whale song to spellbound film students. The staff of the FPS for Social Security and their families met at the Museum for a team building exercise. The Club of Rome chose our premises to hold its prestigious academic session. The 27 Energy Ministers dined amid the dinosaurs... We host numerous events in the Museum, all of them different: our galleries and our completely refitted auditorium are very popular. This was the case again in 2010, due to Belgian Presidency of the Council of the European Union. 74 events were held there, 76% more than the previous year. This represents a significant source of income, bringing in a net total of €92,000, and an opportunity to raise the Museum's profile and introduce it to a wider public, some of them visiting for the first time. These efforts will continue in 2011 with a policy to promote the hire of our facilities and the development of a suitable scale of charges.

Our museum: such stuff as dreams are made on!

Dimitrios suffers from a serious illness. This young Greek, who is a dinosaur fan, dreamed of travelling to Brussels to visit our Museum. Thanks to the 'Make a Wish' organisation, that dream became a reality on Wednesday 8 September. Personnel from the Reception Service, which organised this special visit, worked tirelessly to make Dimitrios' visit unforgettable. At our Museum, giving visitors a high-quality

reception is a point of fundamental importance that requires staff to be flexible, and also to undergo continuing training. Hence members of our reception staff are trained in languages, in welcoming tourists, in welcoming disabled guests, and in safety issues. All of this means we can guarantee our public a truly personal welcome.



An ecodynamic enterprise

It's good to talk about protecting biodiversity and the environment, but it's also important to match our deeds to our words. On the initiative of a small, completely voluntary in-house group, we have signed up to an environmental certification process developed by the Brussels-Capital Region. Energy consumption, waste, biodiversity, water, transport: every part of our activity has been analysed and an action plan has been launched to improve the management of the Rue de Vautier and Rue Jenner sites. Our efforts have paid off: on 30 March 2010, we received a 1 star 'ecodynamic enterprise' rating. We must keep up our efforts in the years to come, among other things by professionalising the process.



23.9

A general evacuation drill is held at the Museum.

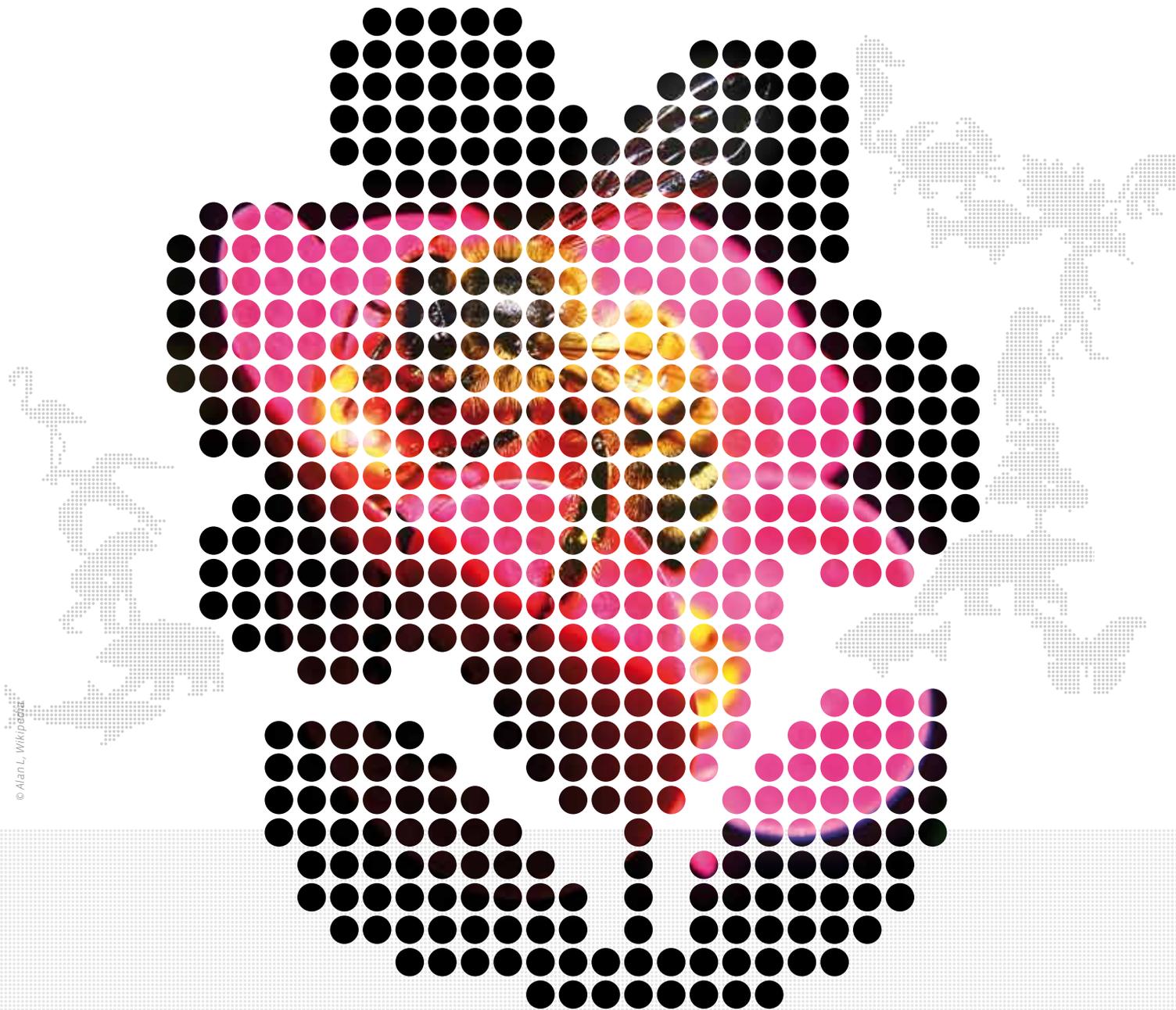


5.10

Three scientists from the Institute, working with an international team, discover a new species of African antelope.



International Year of Biodiversity



The facts are now established: species and ecosystems are disappearing at a rate unprecedented in the history of life on earth, and human activities are the main cause. In 2002, ten years after the signing of the Convention on Biological Diversity (CBD) in Rio, governments worldwide pledged to achieve a reduction in the rate of biodiversity loss. The target year was 2010, which was proclaimed to be the International Year of Biodiversity. In October 2010, the signatories to the CBD met in Nagoya for an update on the 2010 target and to decide on future actions. As it held the Presidency at that time, Belgium represented the European Union. As National Focal Point to the CBD, we played a central role in these negotiations at both national and international level. With our dual status as a scientific institution and a popular museum, we made the most of this unique opportunity to put biodiversity at the top of the scientific, social and political agenda. We have established an ambitious programme of activities, mobilising 189 employees – about two-fifths of our staff! In 2010, more than ever before, biodiversity was at the heart of our concerns.

Educating the general public

‘Biodiversity is life. Biodiversity is our life.’ This was the slogan of the International Year of Biodiversity. But how can we get this across to the general public when most people have no idea what biodiversity means? Given this, education and awareness-raising remain one of our core missions, now and in the future. Several actions have been devised with this in mind.

Our new permanent exhibition dedicated to urban biodiversity, **BiodiverCITY** (see page 16), educates visitors on what biodiversity is, and how it can be protected. **PlanetObserver**, a multimedia game accompanied by a quiz, has created an opportunity to rediscover all of our galleries from the perspective of biodiversity. To broaden our field of action and reach a different public, outside the museum, we created the exhibition **Men and animals, beyond Nature and Culture**, which drew 147,653 visitors to the Royal Palace. This original exhibition, which was the fruit of collaborative work between the four major federal museums (Art and History, Natural Sciences, Fine

Arts and Central Africa), encouraged visitors to think about how people have related to nature in different societies around the world, past or present. Thus art and ethnography provided a fresh perspective on biodiversity. In addition, from April to May, an observation post for the **peregrine falcons** nesting on the tower of a Brussels Cathedral attracted nearly 22,000 visitors, while a city-wide treasure hunt, the **Biogeosafari**, sent 2,000 participants across Brussels in quest of urban biodiversity. Finally, we organised a **Bee Festival** to educate the general public about the importance of these pollinators in both North and South and to fight against their decline. It attracted over 4,000 people.



But to curb the loss of biodiversity, knowledge and understanding are not enough: we must also act and commit to concrete action. This is the goal of the pledge campaign **Je donne vie à ma planète/Ik geef leven aan mijn planeet**, initiated in 2007 and relaunched in 2010. A new stand, a new web-site and a promotional campaign gave it a real boost: in 2010, 15,800 people, 32 schools and 81 partner associations pledged to 56,800 actions to help biodiversity. To reinforce the campaign, a tool for the general public was needed. A book was produced, listing **366 concrete actions** to favour biodiversity. 63,975 copies were printed and distributed free of charge. The book was so successful that a version called 52 actions for bio-



3.10

The Geological Service gets the Dong Van Karst Plateau (Vietnam) included in UNESCO's global geoparks network.



18 > 29.10

Eight employees take part in the negotiations at the Conference of Parties to the Convention on Biological Diversity in Nagoya.



diversity was created in the six official languages of the UN, and an online version was produced in the 23 official languages of the European Union.

roots organisations, who sought to lay the groundwork for a European strategy for large-scale restoration of wild habitats. A site, www.species.be, was developed to



provide access to current knowledge on Belgian species (see page 12).

Our researchers also participated in a major international expedition, *Boyekoli Ebale Congo 2010*, organised in partnership with the Royal Museum of Central Africa, the National Botanic Garden of Belgium and the University of Kisangani. Between 26 April and 12 June 2010, they travelled more than 1,000 km on the Congo River. Zoologists, botanists, geologists, cartographers, hydrologists, ecologists, archaeologists and linguists set about studying this unique environment. They analysed the water quality of the river and its tributaries and studied their fish and invertebrate populations. They also studied the flora and fauna of the forest, visiting villages and interviewing their inhabitants. Their goal was to improve knowledge of this huge river basin, the second largest area of tropical rainforest in the world, which plays a crucial role in the economic development of the Congolese state and its people.

International
Year of
Biodiversity

Supporting the actions of schools

Today, biodiversity is on the curriculum for children from pre-primary through to secondary school. We have produced two tools which should help schools with their teaching. The *BiodiverCity travelling workshop* educates young people in Brussels about biodiversity (see page 16) while a *free online educational kit* <http://jedonnevieamaplanete.en-classe.be> – <http://ikgeeflevenaanmijnplaneet.indeklas.be> provides teachers and pupils throughout the country with a multimedia library featuring interactive tools, videos and articles on biodiversity, its importance, the threats facing it, and ways to preserve it.

Improving our knowledge of biodiversity

Knowing about every component of biodiversity and understanding how they are connected and what mechanisms are at work in ecosystems is the constant task of our researchers in their field work and laboratory studies, as well as in the analysis of our collections. We had an opportunity in 2010 to intensify these efforts, but also to make many contacts with foreign colleagues.

A colloquium, *SciColl*, brought 85 curators to the Institute who are in charge of scientific collections in 35 countries, in order to develop the interdisciplinary use of these collections at international level. The colloquium was complemented by a website (www.scicoll.org). Another colloquium entitled *Restoring European wildernesses* was attended by 110 representatives of national and international agencies, scientists, NGOs and grass-



© Kris Pamecoelcke



15.11

The book 'Coques, coquilles, coquillages' reveals the beauty of the Dautzenberg collection, seen through the eyes of photographer Emmanuel Berry.

The year ended with a highly original initiative called **Positive Visions for Biodiversity**, in which 230 people – scientists, journalists, NGO representatives, artists, industrialists and others – from 43 countries gathered in Brussels for a huge brainstorming session based on the ‘21st Century Town Meeting ®’ participatory format. Two general questions were asked: ‘What future do we want for our planet and those who live on it?’ and ‘How can we build a lasting relationship with biodiversity?’. Together, they developed a vision for 2050 of a world where sustainable management of biodiversity is at the heart of a political and economic governance which is more transparent and effective, where 90% of humans are able to live in a green ‘city’, where habitats and resources are managed in a sustainable and participatory manner. They then laid the groundwork for an action plan to achieve it. All this has fed into the recommendations of the *European Platform for Biodiversity Research and Strategy*.



Supporting the policymakers’ actions

It was only natural for eight members of the RBINS, as National Focal Point to the CBD, to be included in the Belgian delegation representing the European Union at the biodiversity conference in Nagoya (Japan). Of the 47 issues considered during the conference, 17 were coordinated by our experts. At the end of two weeks of hard work, marked by a willingness to compromise and a concern for the future of our planet, the Conference of Parties (COP) to the CBD adopted 47 decisions that will enable the United Nations to face the unprecedented challenge of continued loss of biodiversity, compounded by climate change.



The blog ‘COP10 Biodiversity’ <http://cop10.biodiv.be/> enabled the general public to understand and follow the progress of the conference day by day, particularly through the work of the Belgian delegation. In one month there were over 5,000 visitors and 28,000 pages were consulted!



3.12

The Institute co-organises ‘Entomology in Belgium’ conference.



9.12

Urban biodiversity moves into the Museum. BiodiverCITY, our new permanent gallery, opens its doors.



Facts & figures



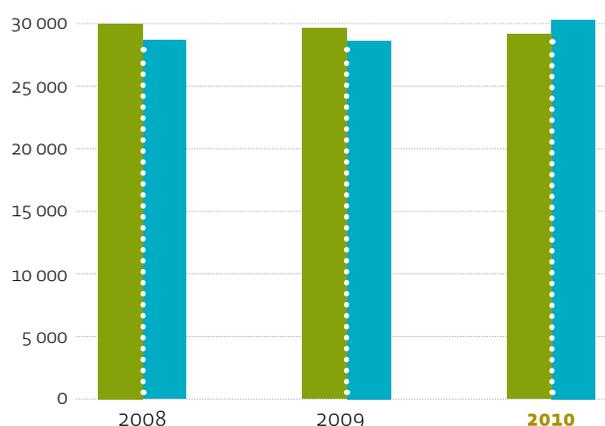
Finances

For the first time, the expenditure and income shown here includes staff who work for the Belgian Science Policy on a multiannual basis. This 'staff budget' provided to the Institute covers statutory staff and some contracted staff, and represents over one-third of the Institute's resources.

Income and expenses (in €K)

After two years of surplus, 2010 ended with a deficit for the year of €1,160 k. This deficit is explained by the decrease in the number of visitors to the Museum, the increase in wage costs borne by the Institute and the substantial resources devoted to the International Year of Biodiversity, including the opening of a new permanent gallery, provision for which had been made in previous years' accounts.

	2008	2009	2010
Income	29 983	29 645	29 143
Expenses	28 660	28 651	30 303
Balance	1 323	994	-1 160



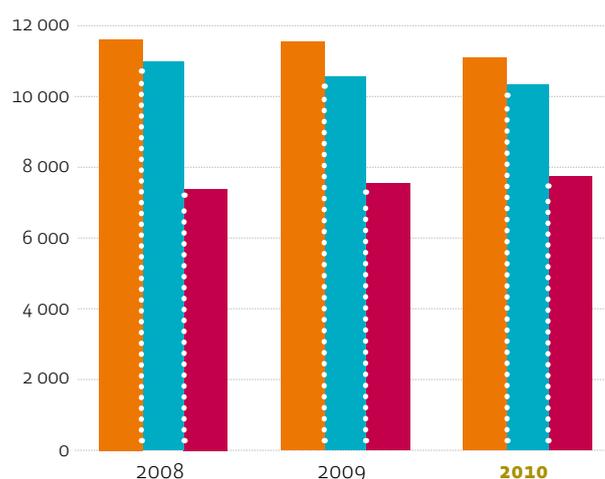
Sources of income (in €K)

The Museum's own income is down by 4%. This overall decrease results from a mixed situation: excluding grants for the renovation of galleries, income relating to the activity of the Museum is down by 15%, whilst income from the activities of the scientific departments is up by 10.5%.

The staff budget has decreased (- 2.2% between 2009 and 2010). This decrease is due to the complexity of recruitment procedures, which prevents optimal implementation of the staff plan.

Endowments are up by 2.4% compared with 2009.

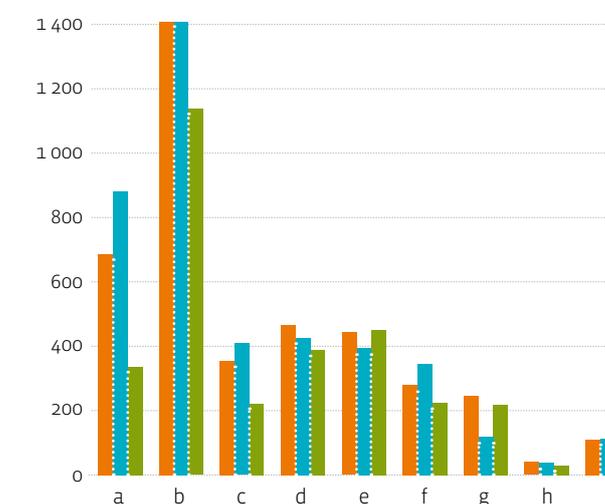
	2008	2009	2010
Museum's own income	11 624	11 548	11 095
Staff budget	10 974	10 553	10 322
General grant	7 385	7 544	7 726



Breakdown of Museum income by source (in €K)

Visits to the Museum decreased by 15% between 2009 and 2010. With the exception of income connected with the organisation of events and with sponsorship, all income linked to Museum activities is down.

	2008	2009	2010
a. Grant for the ren. of the Museum	687	881	336
b. Ticket sales	1 407	1 408	1 137
c. Exhibition hire and sales	355	409	221
d. Shop	465	426	390
e. Donations - sponsorship - grants	443	394	452
f. Education service	279	346	224
g. Events	245	118	217
h. Cafeteria concession	40	39	29
i. User observatory*	110	112	110
Total	4 031	4 133	3 116

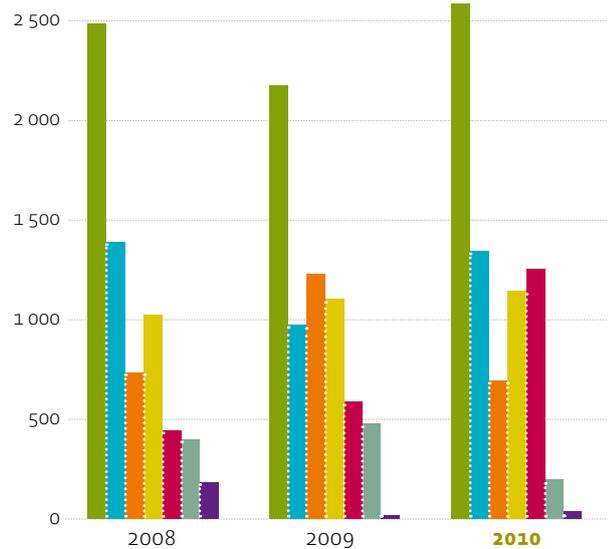


* all federal museums

Breakdown of research income by source (in €K)

Income relating to research projects is up by over 10% compared with 2009. This increase is particularly significant in the case of money coming from the private sector (+ 114%), which has been pushed up by environmental impact studies in connection with the development of the offshore wind farm.

	2008	2009	2010
Belspo grants	2 486	2 174	2 583
Federal grants (excl. Belspo)	1 388	974	1 343
European Commission	732	1 230	695
Grants from Belgian fed. bodies	1 025	1 102	1 145
Private sector	443	587	1 255
Foreign grants	400	479	197
Belgian universities	183	18	36
Total	6 657	6 564	7 254

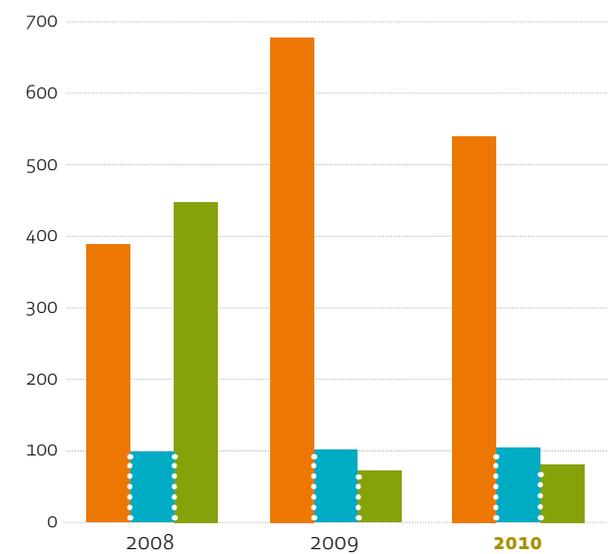


Miscellaneous income by source (in €K)

Along with the major subsidised research projects, the scientific departments have various forms of income relating to their ordinary activities (laboratory tests, organisation of colloquia, sale of geological maps, etc.). This income is included under the heading 'scientific activities'. 'Social activities' includes income from the crèche, the mess and the guesthouse.

Finally, 'management' income is made up of bank interest, royalties, administrative fees invoiced to third parties, unallocated donations, etc.

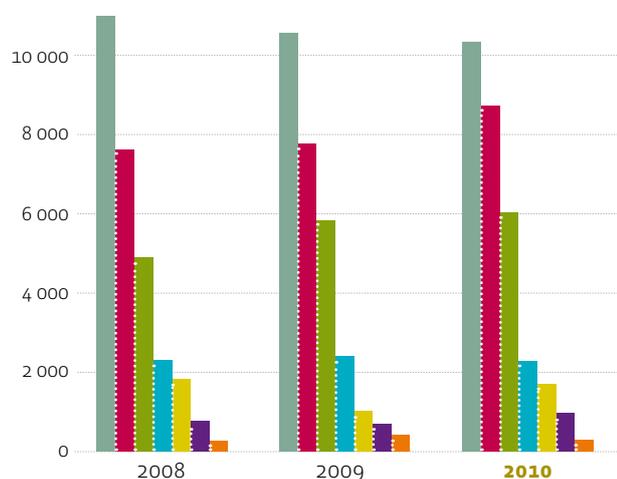
	2008	2009	2010
Scientific activities	389	678	540
Social activities	99	101	104
Management	448	72	81
Total	936	851	725



Change in expenditure by source (in €K)

The Institute's overall expenses increased by almost 6% between 2009 and 2010. The most marked change relates to staff paid out of the Museum's own resources (+ 12%), explained by the application of the reform of the pay scales for scientific workers, the increase in the volume of research work and temporary recruitment of staff for the International Year of Biodiversity.

	2008	2009	2010
Staff budget	10 974	10 553	10 322
Staff own resources	7 621	7 751	8 712
Ordinary operational expenses	4 906	5 820	6 034
Flight equipment and vessels	2 297	2 402	2 270
Investment in the Museum	1 836	1 020	1 708
Equipment	764	693	964
Library and collections	262	412	293
Total	28 660	28 651	30 303



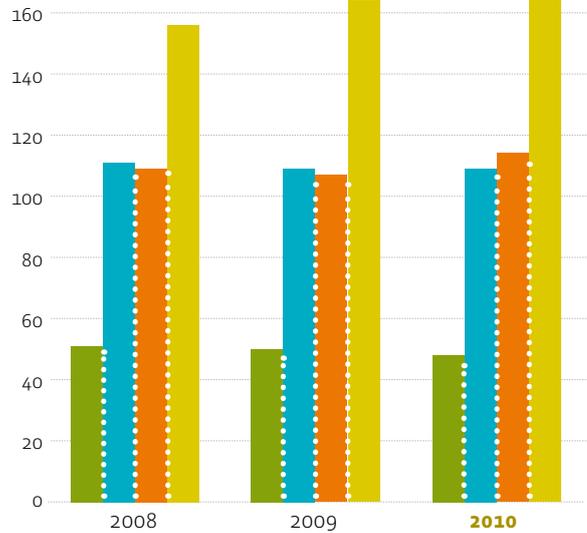
Staff

Staff breakdown

The decrease in the number of statutory staff has continued, connected with the suspension of posts in 2009. This should be resolved in 2011 or 2012.

The number of contractual staff members increased significantly, especially in connection with the increase in the number of scientific projects and activities relating to the International Year of Biodiversity.

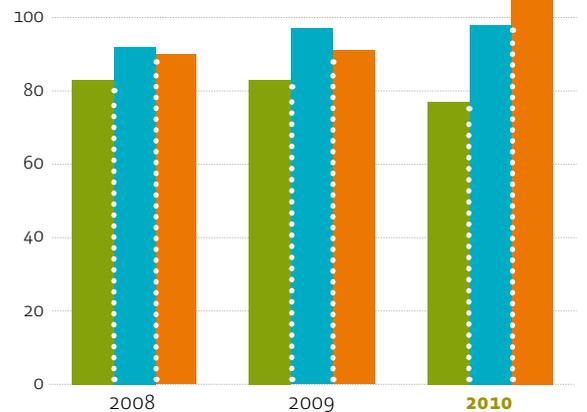
	2008	2009	2010
■ Statutory scientists	51	50	49
■ Statutory non-scientists	111	109	109
■ Contractual scientists	109	107	114
■ Contractual non-scientists	156	164	169
Total	427	430	441



Sources of financing for contractual staff

The analysis of sources of financing for contractual staff confirms this overall reduction in the use of the staff budget, and shows a proportional increase in expenses financed from the Museum's own resources and from outside projects.

	2008	2009	2010
■ Budget	83	83	77
■ Own resources	92	97	98
■ External projects	90	91	108
Total	265	271	283

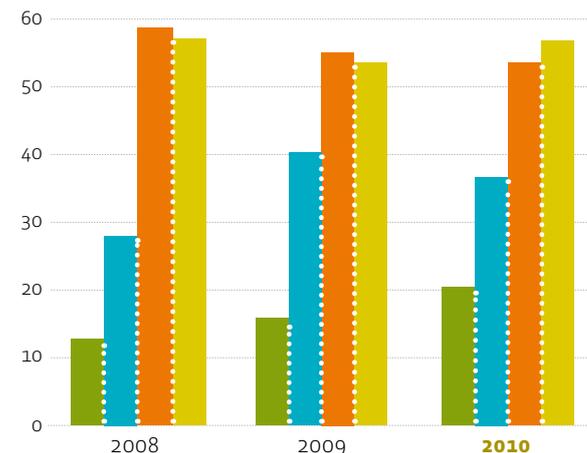


Percentage of female staff

One positive sign is the increase in the proportion of women among the statutory scientific staff.

Among contractual staff, women remain in the majority, although the trend in this respect is downwards.

	2008	2009	2010
■ Statutory scientists	12,7	15,8	20,4
■ Statutory non-scientists	28	40,3	36,7
■ Contractual scientists	58,7	55,1	53,5
■ Contractual non-scientists	57,1	56,1	56,8



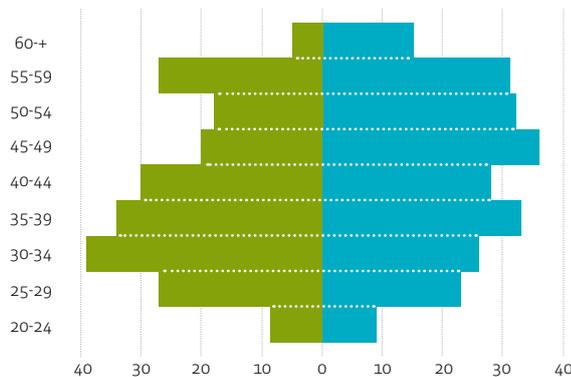
Age pyramid (2010)

Comparison of the age pyramid for 2010 with that for 2009 (average age in 2009: 48.43 years) shows the average age of the Institute's staff has fallen.

Female staff predominate in the under-40 age groups.

	Women	Men
60+	5	15
55-59	27	31
50-54	18	32
45-49	20	36
40-44	30	28
35-39	34	33
30-34	39	26
25-29	27	23
20-24	8	9

average age: 42,02 years



Staff breakdown by linguistic role

For staff as a whole, the linguistic balance is 99% adhered to.

Two categories specific to the Institute have been considered separately: members of staff from the Department Marine Ecosystem Management who are assigned to Ostend, and foreigners (For.).

	2008				2009				2010			
	FR	NL	For.	Ostend	FR	NL	For.	Ostend	FR	NL	For.	Ostend
Statutory scientists	25	25	-	1	24	25	-	1	24	24	-	1
Statutory non-scientists	51	51	3	3	54	48	2	3	53	55	3	3
Contractual scientists	57	49	-	5	47	57	-	5	54	50	-	5
Contractual non-scientists	76	63	10	8	79	67	11	7	77	72	11	9
Total	209	188	13	17	204	197	13	16	208	201	14	18

Research

Breakdown of publications (2010)

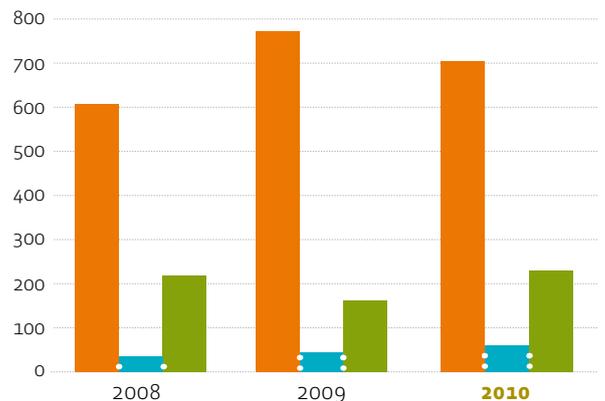
The important role played by RBINS in scientific research is reflected in its large number of scientific publications, including a significant proportion with an international impact factor and/or selection panel. The Institute also remains very active in popularisation work (mainly the Education & Nature and Palaeontology Departments), and especially in the provision of expertise (mainly the Palaeontology and Marine Ecosystem Management Departments).

	Scientific publications			Popular works	Expert reports	Total
	of which journals with IF	of which journals with international selection panel	of which others			
Vertebrates	20	13	7	7	52	79
Invertebrates	147	46	6	14	17	178
Entomology	97	23	29	2	6	105
Education & Nature	77	28	15	6	21	104
Palaeontology	118	40	23	13	39	170
Marine Ecosystem	111	30	1	8	83	202
Geology	130	5	16	9	11	150
Museum	4	0	1	0	0	4
Total	704	185	98	59	229	992

Change in publications

In contrast with previous years, manuscripts submitted and accepted for publication are not included in the 2010 figures. Taking into account this change, the number of scientific publications in the broad sense has continued to increase (+ 12% compared with 2009). The same is true of popularisation works (+ 14%). The number of expertise reports and works remains stable, though at a high level (+ 41%).

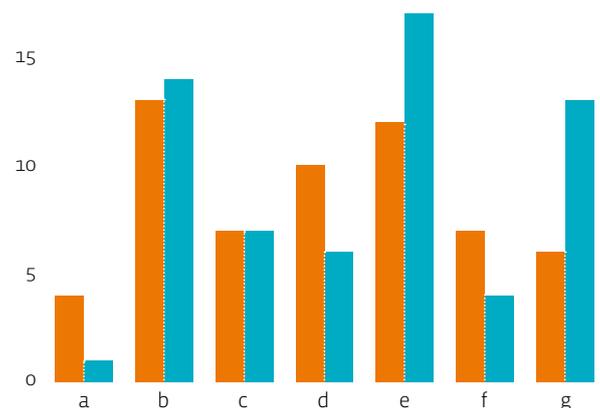
	2008	2009	2010
Scientific publications	606	772	704
Popularisation	36	44	59
Reports	218	162	229
Total	860	978	992



Supervision of students (2010)

RBINS plays a very significant role in providing training in natural sciences, especially for students taking masters degrees. The Invertebrate, Palaeontology and Geology Departments were especially active (dealing with 62% of all supervised students).

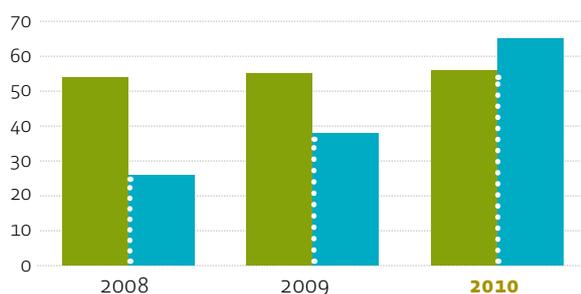
	PhD	Master	Total
a. Vertebrates	4	1	5
b. Invertebrates	13	14	27
c. Entomology	7	7	14
d. Education & Nature	10	6	16
e. Palaeontology	12	17	29
f. Marine Ecosystem	7	4	11
g. Geology	6	13	19
Total	59	62	121



Change in supervision of students

While the number of doctorates has remained stable, the total number of students received by the Museum has grown markedly (up by 30% compared with 2009), confirming our researchers' dynamism in this area and their recognition by the universities.

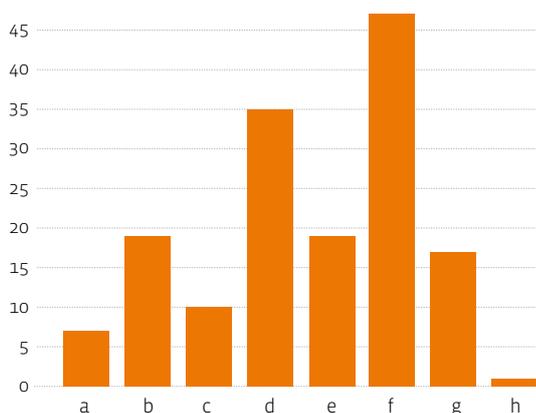
	2008	2009	2010
■ PhD	54	55	56
■ Master	26	38	65
Total	80	93	121



Scientifics projects

The Institute managed or participated in 155 contracts which were already in progress on 1 January 2010 or which started during 2010. The Invertebrate, Education & Nature, Marine Ecosystem Management and Palaeontology Departments are the most active in this respect, but all departments are involved in externally funded projects, reflecting the importance of the Institute both nationally and internationally.

Projects with external funding	
a. Vertebrates	7
b. Invertebrates	19
c. Entomology	10
d. Education & Nature	35
e. Geology	19
f. Marine Ecosystem	47
g. Palaeontology	17
h. Other	1
Total	155



Breakdown of current projects according to source of financing

The number of contracts in progress at the end of 2010 was significantly higher than in 2009 (+ 13%). The Belgian Science Policy remains the largest source, but the private sector is becoming increasingly important, particularly in terms of financial value (based on sums invoiced during 2010: for the National Lottery, for example, contract invoices will only be issued in 2011).

During the financial year 2010, 54 new contracts were initiated (up 23% from 2009).

	2008	2009	2010	2010
	Number	Number	Number	Amount (in €)
Belgian Science Policy	50	59	70	2 704 321,26
Federal funding from other sources	14	9	12	1 666 308,50
National Lottery	2	3	3	-
Flemish Region + FWO	10	11	10	629 068,09
Walloon Region + FNRS	9	5	3	320 582,66
Brussels-Capital Region	7	6	3	126 082,88
Universities	6	4	5	36 150,00
European Commission	9	18	29	694 890,75
Internationals	16	18	12	169 917,98
Private	5	4	8	1 254 873,20
Total	128	137	155	7 602 195,32

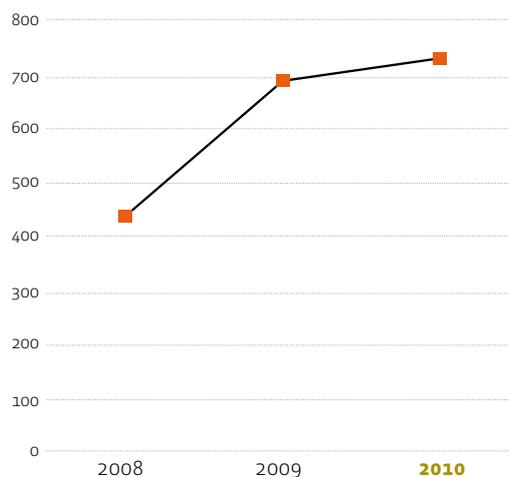
Library

Acquisitions

In terms of additions, the library continued to grow significantly, although less markedly than in the previous year.

The number of subscriptions to the electronic journals (A to Z) is constantly increasing.

	2008	2009	2010
Books and journals	+5 922	+7 823	+8 291
Electronic journals	+175	+251	+42
■ Total e-journals (A to Z)	437	688	730



Loans and electronic journals

The same trends as last year were observed in 2010: a levelling-off of internal loans, and confirmation of the positive balance in the annual report of Impala (the electronic management system for libraries in Belgium).

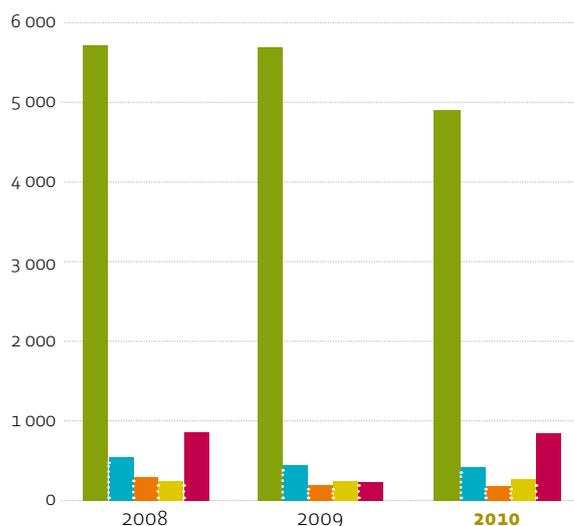
The number of international exchanges remains at a high level.

The trend towards increased use of electronic journals continued in 2010.

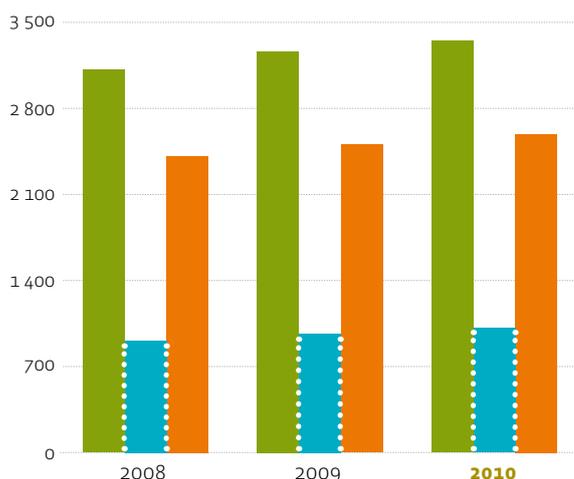
Growth took place at all levels, with figures between 2 and 4%.

More broadly speaking, loans and consultations of paper documents have levelled off, except for international exchanges. Conversely, the use of electronic journals has continued to grow.

Loans	2008	2009	2010
■ Internal loan of documents	5 721	5 696	4 907
■ Inter-library loans	541	442	414
■ Borrowings	294	197	179
■ Loans	247	245	235
■ International exchanges	855	844	847



Electronic journals	2008	2009	2010
■ Periodicals	3 114	3 263	3 351
■ Abstracts	911	967	1 014
■ Full text	2 413	2 504	2 589
Total consultation sessions	6 981	7 112	7 207

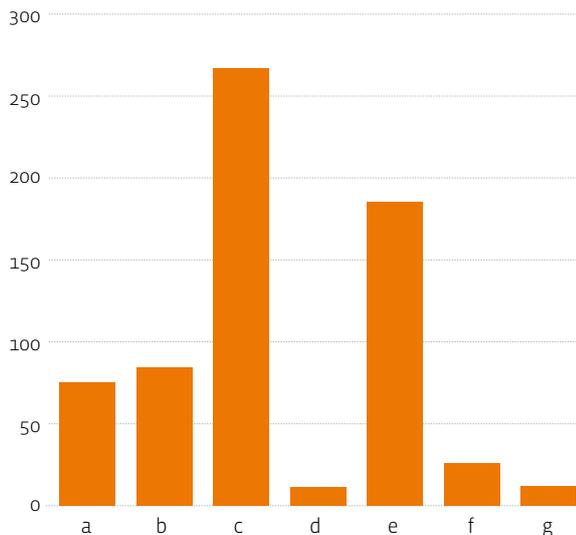


Collections

Visiting scientists (2010)

The number of visiting scientists is down (- 12%) in comparison with 2009, but remains large. The departments which are most in demand are Entomology and Palaeontology, but the differences between the departments are less than for the previous year.

	Number of visiting scientists
a. Vertebrates	75
b. Invertebrates	84
c. Entomology	267
d. Education & nature	11
e. Palaeontology	185
f. Marine Ecosystem	26
g. Geology	12
Total	660



Facts & figures

Management of collections (2010)

The collection enhancement process was up 54% from the previous period. The Invertebrate Department continues to account for most of this activity. The number of loans also remains very significant, despite being lower than in 2009 (- 15%).

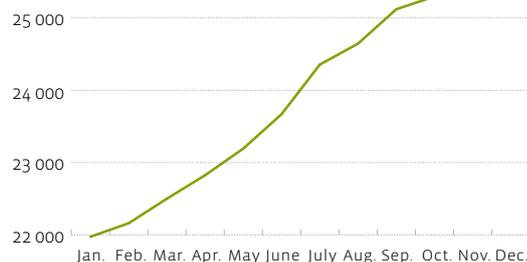
	Additions	Processing/Encoding	Number of loans
Vertebrates	11 589	8 303	32
Invertebrates	5 602	30 826	20
Entomology	139 081	8 400	241
Palaeontology	1 851	7 331	11
Geology	4 623	4 623	15
Total	162 746	59 483	319

Encoding in the DaRWIN database (2010)

In sometimes difficult conditions, the Institute maintained and even intensified its efforts to digitise the collections in 2010: more than 53,000 additional items (type and non-type material) were recorded in DaRWIN in 2010, about 5,000 more than in 2009.

	Recording of types	Recording of non-types	Total items recorded in DaRWIN
January	21 975	289 966	311 941
February	22 162	295 069	317 231
March	22 502	300 788	323 290
April	22 826	306 594	329 594
May	23 195	311 496	334 496
June	23 670	316 603	340 273
July	24 355	321 544	345 899
August	24 645	326 240	350 855
September	25 120	329 628	354 748
October	25 281	333 306	358 587
November	n/a	n/a	n/a
December	25 616	339 421	358 587
Increase	3 641	49 455	53 096

Recording of types



Recording of non-types

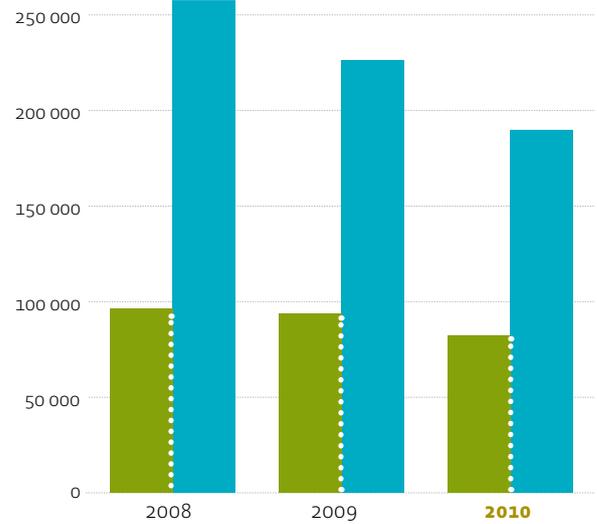


Museum

Changes in Museum attendance

The number of visitors to the Museum underwent a significant fall of 15% compared with 2009. The effect of the opening of new permanent galleries (between 2007 and 2009) has faded. The impact of the opening of a new room in December 2010 was adversely affected by the weather, which was not conducive to visits. The proportion of visitors coming as part of a group has risen: in 2008, which was a record year for visits to the Museum, they accounted for 27.30% of total visitors, while in 2010 the figure exceeded 30%. 60% of our visitors are under the age of 18, which confirms previously identified trends.

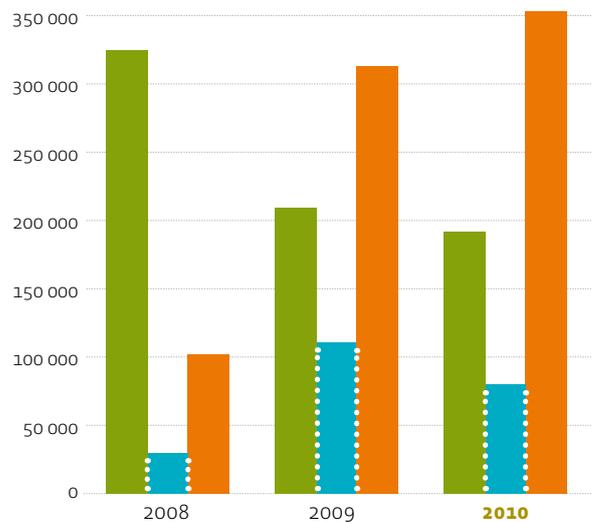
	2008	2009	2010
Visitors in groups	96 472	93 490	82 393
Individuals and families	257 371	225 956	189 541
Total	353 843	319 446	271 934



Breakdown of permanent galleries/temporary exhibitions

The Museum presented a temporary exhibition with separate entry fees for eight months in 2010 as against ten months in 2009, which explains the decrease in attendance for this kind of exhibition. At the same time, temporary exhibitions separately or jointly mounted by the Museum and touring abroad have attracted a growing number of visitors: in 2010, the number of 'outdoor' visitors to these exhibitions actually exceeded the total number of 'indoor' visitors.

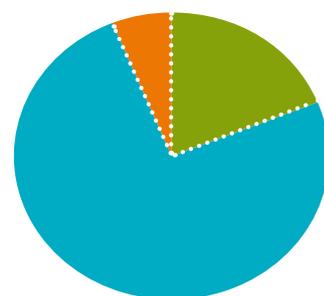
	2008	2009	2010
Permanent galleries	324 613	208 900	191 926
Temporary exhibitions (indoor)	29 230	110 546	80 008
Total Museum	353 843	319 446	271 934
Temporary exhibitions (outdoor)	102 000	313 000	353 000



Reduced and free admission (2010)

A quarter of our visitors took advantage, as in previous years, of free access to the Museum, including a non-negligible proportion (6%) visiting on the first Wednesday afternoon of the month.

	Number	Percentage
Free admission	51 756	19
Paid admission	204 395	75
Free admission on 1 st Weds of month	15 783	6
Total	271 934	100



Visits to website

The figures show contrasting developments. While the number of website visitors continued to increase slightly (+ 1%), the number of pages viewed decreased (- 28.5%) compared with the previous year. This could mean a change in the behaviour of our web visitors, who remain very numerous and show how important this means of contact is. Note the addition in 2010 of a URL: www.naturwissenschaften.be.

	2008	2009	2010
Pages	16 556 385	19 624 938	14 034 726
Visitors	2 759 437	3 065 299	3 076 161

Change in shop customers

As in 2009, the trend curve of customers in the shop has followed that of visitors to the Museum, although the decrease is less pronounced (Museum: - 15%, shop: - 10%). Popular science books represent an important part of sales, which emphasises the active role that the shop plays in the dissemination of scientific knowledge. Note also that the average expenditure per visitor has been rising constantly for the last few years.

	2008	2009	2010
Museum visitors	353 843	319 446	271 934
Shop customers	35 414	29 361	26 494
Expenditure /customer	12,87	14,21	14,51
Expenditure /visitor	1,29	1,31	1,41

The Museum in the media

The impact of the activities of RBINS in the media – both in print and on radio and television – was higher than ever in 2010, thanks to the many events related to the International Year of Biodiversity. Similarly, Institute staff have participated very actively in improving the content of information.

	FR	NL	Autres
Printed press			
General articles	213	210	4
Mars	14	21	0
Whales and dolphins	45	39	2
Biodiversity	126	157	2
Total printed press	398	427	8
<i>of which itws. with RBINS employees</i>	28	49	0
Radio and TV			
Total Radio and TV	80	65	1
<i>of which itws. with RBINS employees</i>	69	58	1

Activities organised by the Educational Service

Despite the significant decrease in Museum visitor numbers between 2009 and 2010 (- 15%), the number of participants in the educational activities has remained the same (- 2%). The number of participants visiting in groups has even increased slightly compared with 2009 (+ 1%), which is particularly remarkable and reflects the growing success of activities generated by the Dutch-speaking and French-speaking educational services. The number of activities held annually stabilised at around 2,800! Average attendance per activity is more than 18 participants, a very encouraging figure which confirms the point made above.

	2008	2009	2010
No of participants			
Groups (indoor and outdoor)	46 996	46 872	47 155
Individuals	8 453	4 932	3 810
Total	55 449	51 804	50 965
No of activities organised			
	2 867	2 861	2 768
Average attendance per activity			
	19,3	18,1	18,4

Proportion of visitors in accompanied visits (percentage indoor)

The proportion of visitors accompanied by staff on their visit relative to both the total number of visitors to the Museum and the number of visitors in groups is constantly increasing, and actually exceeds 50% of the latter category.

	2008	2009	2010
Versus nbr total visitors Museum	14,62	15,12	16,52
Versus nbr of visitors in group	45,05	46,57	50,08

Breakdown of visitors in groups

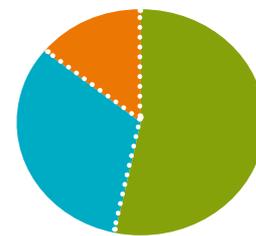
The relative proportion of participants in educational activities outside the Museum increased sharply in 2010. This is due to organised activities in the science truck, XperiLAB.be, which launched such activities in October 2010 and has been very successful since then. This proportion should therefore show a further substantial increase in 2011.

	2008	2009	2010
Total no of visitors in groups	96 472	93 490	82 393
Total no of accompanied visitors in groups (indoor)	43 464	43 539	41 261
Total no of accompanied visitors (outdoor)	3 532	3 333	5 894

Breakdown of visitors per activity (indoor)

The trends observed in the past have continued: participants on guided tours represent more than half of all accompanied visits, but there is also great demand for workshops.

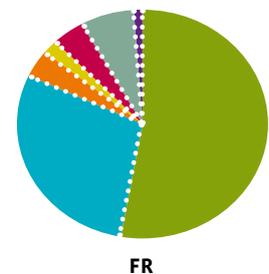
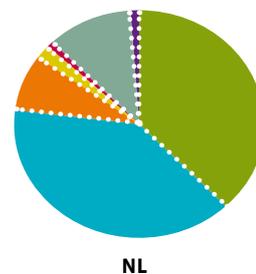
	Number
Guided tours	24 102
Workshops	14 640
Others	6 329
Total	45 071



Breakdown of participants in guided tours (percentage)

School groups account for most of the participants in guided tours (77% of tours for Dutch-speakers, and 82% of tours for French-speakers). However, the other categories have higher proportions than for the workshops. There are differences between the Dutch- and French-speakers, with more requests for visits from French-speaking nursery and primary schools, and slightly more visits from Dutch-speaking secondary school pupils. The proportion of adults is also noticeably higher among Dutch-speakers.

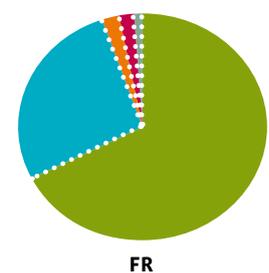
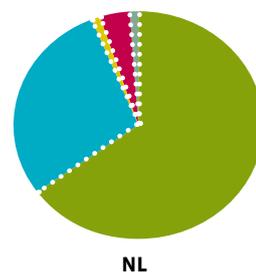
	NL	FR
Nursery & primary school	38	53
Secondary school	39	29
Higher education	8	4
General education	2	2
Youth groups	1	4
Groups of adults	11	7
Individuals and families	1	1
Total	100	100



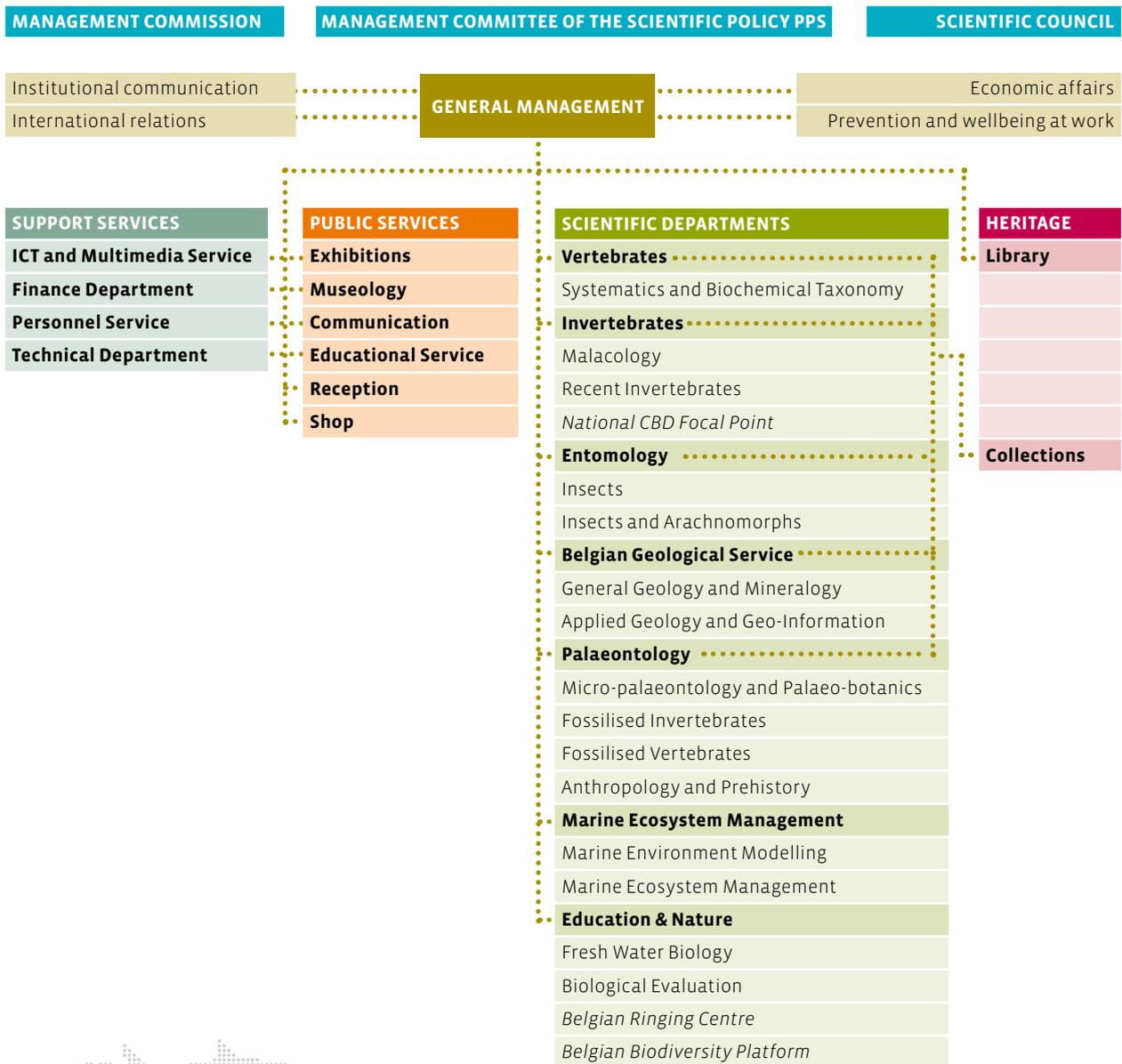
Breakdown of participants in workshops (percentage)

The overwhelming majority of participants in the workshops come from school groups, mainly at primary level. It is notable that the figures for Dutch- and French-speakers are very similar, except for higher education and youth groups.

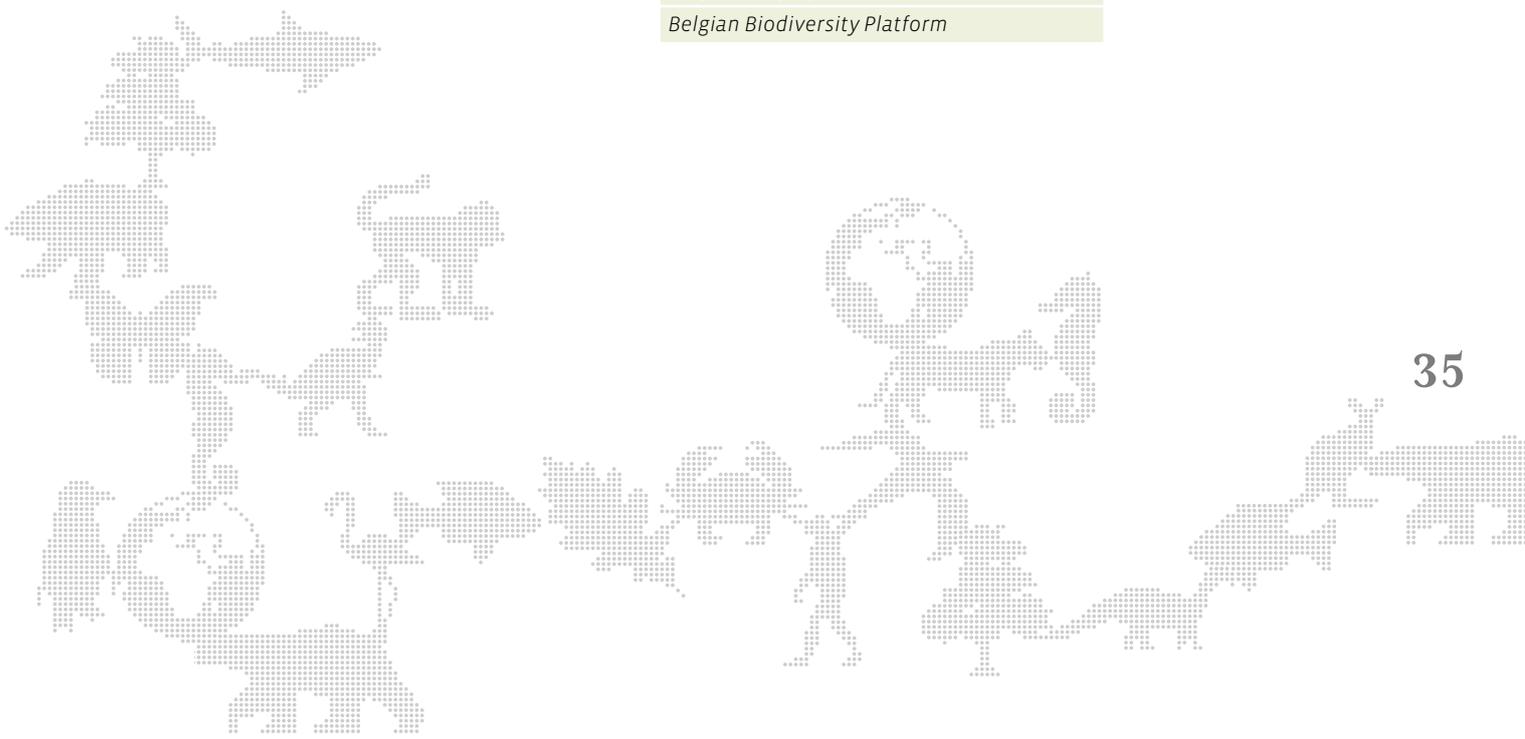
	NL	FR
Nursery & primary school	65	67
Secondary school	29	27
Higher education	-	2
General education	1	-
Youth groups	4	2
Groups of adults	1	1
Individuals and families	-	1
Total	100	100



Organisation chart



3
Facts & figures



The RBINS in brief

MISSIONS

The Royal Belgian Institute of Natural Sciences is one of the ten federal scientific establishments that are governed by the Belgian Science Policy (Belspo).

It has been entrusted with **four major missions**:

- Scientific research into natural sciences.
- Scientific expertise at the service of the public authorities.
- Conservation and management of scientific and heritage collections.
- Dissemination of scientific knowledge in society.

The RBINS is a separately managed State service. It is managed by three independent entities:

- The Scientific Council, which includes RBINS and University researchers. It offers advice on issues of a scientific nature that have an impact on the accomplishment of the establishment's tasks.
- The Nature Focus Management Commission, which comprises the RBINS and the Royal Museum for Central Africa. It is made up of representatives from both institutions and external members. It is responsible for the financial and practical management of the RBINS.
- The Management Board, consisting of the Institute's management and heads of department. It is responsible for the Institute's day-to-day management.

In addition, the director of the Institute is a full member of the Management Committee of the Belgian Science Policy.

RESEARCH & EXPERTISE

One out of every three people at the RBINS is a scientist.

They are mainly biologists studying fauna, i.e. zoologists, taxonomists, systematists, phylogenists and ecologists. The scientific personnel also includes oceanographers, geologists, palaeontologists, anthropologists, prehistorians and archaeologists, as well as geographers, physicists, bio-engineers and mathematicians, which enables it to conduct multidisciplinary research.

Lines of Research

- The study of biodiversity, through taxonomy, phylogeny and systematics in all animal groups (vertebrates, invertebrates and insects), be they extant or fossil.
- The study of land, freshwater and marine ecosystems.
- The study of the history of life, the climate and human installations. Research into the mechanisms involved in the evolution of life, along with the geology of Belgium and modelling the North Sea.

Service Provision

The RBINS provides scientific expertise under Belgium's international commitments in relation to environmental protection.

It develops tools and methods for monitoring natural land or marine environments.

It also offers useful advice for the development of national and European policies for the protection and conservation of biotopes and biodiversity.

COLLECTIONS

With approximately 37 million specimens conserved as Belgian heritage of universal significance, the RBINS's biological, palaeontological, prehistoric and geological collections serve above all as reference and research tools.

Just behind London and Paris in the European classification, the collections in Brussels have been awarded the European label of "major research infrastructure" and in this respect are constantly being visited and studied by researchers from around the world.

The collections are dynamic; they are constantly being added to and provide an essential basis for numerous publications, taxonomical reviews and monographs.

For several years now, the RBINS has been committed to an ambitious programme to digitise its collections and to do so has developed an *open-source* software, DaRWIn, which has made it possible to encode all the data on any collection of specimens, whatever their taxonomical group.

MUSEUM

For the general public, the Natural Science Museum is the visible part of the RBINS. It has 16,000 m² of permanent galleries, temporary exhibition rooms and educational workshops, enabling it to welcome more than 300,000 visitors each year, approximately 30% of whom are school groups.

Its Dinosaur Gallery is world famous, it being the largest in Europe. In 2009, it opened its Evolution Gallery, thus completing the History of Life Wing. In 2010, it created the first part of its Biodiversity Wing by opening BiodiverCITY.

It plays a leading role in the promotion and dissemination of scientific culture, both within and beyond its walls, notably through travelling exhibitions and events. It is pursuing its ambitious efforts to gradually renovate the premises, to make the museum more convivial and increasingly better adapted to the expectations of society; it is also resolutely oriented towards the promotion of a more respectful approach to nature.

All of the RBINS activities are described in the 2010 detailed report (approximately 550 pages FR/NL). This report is available on CD ROM and can be obtained on request from direction@naturalsciences.be

Photography credits (unless otherwise stated):

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 Printed on recycled paper with vegetable based inks.



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