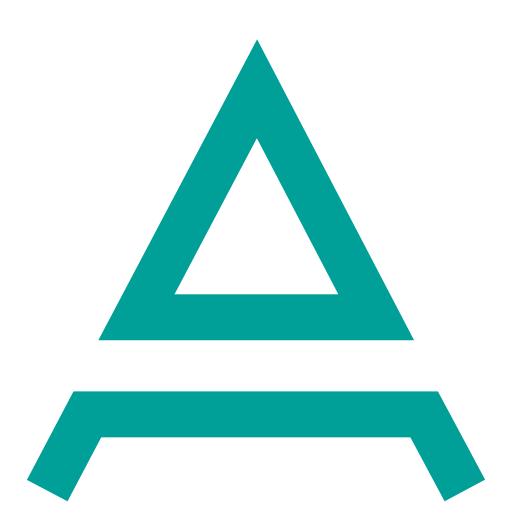


ANNUAL REPORT 2020





 ${\it Guido\ Gryseels, RMCA\ Director\ General.}$



Introduction Guido Gryseels Director General of the RMCA

2020 has been an unusual year with great challenges for everyone both at a personal and professional level. When, on 12 March, the federal government decided to close all cultural activities, the hotel, restaurant and catering sector, and museums from 14 March onwards, and when the country went into its first lockdown four days later, it was not only the museum that shut its doors, but also all the other buildings engaged in scientific activities. As a result, all operations had to undergo root and branch adjustment. However, even though the museum has been closed for the greater part of the year, the institution itself has never gone into lockdown; thanks to the installation of new software, operations and communications have never come to a standstill and the institution has continued to keep functioning well throughout both lockdowns. Everyone has learned how to work differently, from home and using digital tools, making it also possible to devote more time to family life given that children were at home much more too. In view of the positive experiences from this, many of these new approaches to work will be retained.

During its period of closure, the museum was teeming with activity behind the scenes. Activities initially intended to be carried on *in situ* were transformed – successfully – into digital ones that attracted great interest. At the same time, work continued apace on preparations for the first tem-

During its period of closure, the museum was teeming with activity behind the scenes. Activities initially intended to be carried on *in situ* were transformed – successfully – into digital ones that attracted great interest.

porary exhibition at the renovated museum and further work was completed on the permanent exhibition as well, including the redesign of the grand rotunda. This makeover was done within the framework of the museum's on-going process of decolonization. In part because of the emerging Black Lives Matter movement, as well as issues surrounding colonial era statuary and anti-racism campaigns, this theme was more important than ever.

The museum invited the Congolese artist Freddy Tsimba to enter into dialogue with the museum collections for his first temporary exhibition Mabele eleki lola! The earth, brighter than paradise. The curator of the exhibition was the writer In Koli Jean Bofane with scientific input from Henri Bundjoko, director of the National Museum of the Democratic Republic of Congo in Kinshasa. As anticipated, the exhibition opened its doors on 28 October 2020, albeit with an alternative, entirely corona-proof preview and press conference. The exhibition met with an enthusiastic response from press and public alike. That same evening, the museum was compelled to close its doors once again owing to the coronavirus situation. As a result of the pandemic, it was not possible either to organize any group activities in the permanent or temporary exhibition. Our school activities came to a standstill as well.

The pandemic also necessitated adjustments to be made to our scientific activities. Missions, field

work and congresses were either cancelled or replaced by video conferences. Residential study programmes for African scholars at our institution were postponed, and for those who were already in Tervuren before the outbreak the situation meant delaying their return owing to the shutting down of air traffic. A week-long video conference was organized with the Rwanda Cultural Heritage Academy in order to discuss the renovation of the National Museums of Rwanda and, in particular, that of the Ethnographic Museum in Huye. International experts also took part in this. Moreover, online training programmes were organized for Rwandan scholars with reference to collections management.

Despite these challenges, the scientific services exercised great flexibility to maintain an extremely high level of productivity. In fact, in spite of everything, 2020 was a year of exceptional highlights. A leading article in the prestigious journal Nature by scientists from the University of Leeds and our Wood Biology service provided the first broad-based evidence that the feared shift in tropical forests from carbon sink to carbon source has already begun. This research is having a direct impact on global climate models and, consequently, met with unprecedented reverberations in the international press. Another study, likewise in Nature, and in which an RMCA archaeologist participated, shed new light on the history of human habitation in Africa through the analysis of 8,000 and 3,000-year-old DNA. An entomologist and a geologist were ranked by Stanford University among the 2% most cited scientists in the world. Outstanding results such as these show how the RMCA is performing top-level research in a diverse range of fields while successfully perpetuating its reputation.

On the basis of that expertise, we also see as one of our most important tasks the creation of the researchers of tomorrow, particularly in our partner countries in Africa. In 2020 our scientists supervised as many as 72 doctoral students, 61% of whom came from twelve different countries in Africa. Many of them submitted their research projects on a second PhD Day in November.

Great progress was also made in 2020 in terms of digitization. Substantial investments made in previous years are bearing fruit with regard to accessing the collections online. Through the setting up of a digitization steering group I am hoping that our digitization programme will enjoy still more efficiency gains.

New external research funding was obtained over the past year. The new projects include topical and important themes such as human remains and restitution. Sustainable development is at the core of projects concerning biodiversity, fruit fly pest control, natural risks and infectious diseases in Africa. To that end it is crucial to work in close collaboration with African partner institutions, such as the extended partnership with the Rwanda Petroleum and Gas Board in terms of strengthening geological research in Rwanda. Thanks to the launch of these new projects and the start of the first of our FED-tWIN mandates, out of a total of eight, we see promising prospects for the RMCA over the next few years as a reference centre for research in relation to Central Africa.

First and foremost, I would like to extend my heartfelt thanks to the entire personnel. Everyone has made an extraordinary effort to take a completely new approach, and in quick measure, to the organization of our whole operation. Above all, it is thanks to their great input and inventiveness that our institution has been able to continue to function well despite everything.

Furthermore, I should also like to thank our structural and institutional partners: Federal Science Policy, the Directorate General for Development Cooperation, the Ministry of Foreign Affairs, the National Lottery, the Federal Buildings Administration and our other sponsors.





Nobody could have foreseen that the museum would be closed to the public for a great part of the year or that, as a result, an entirely new digital platform would be developed.

2020 started out auspiciously, including in the programme of activities the opening of the new workshops for schools and the first temporary exhibition since the museum's reopening at the end of 2018. Nobody could have foreseen that the museum would be closed to the public for a great part of the year or that, as a result, an entirely new digital platform would be developed.

AfricaSunday

The year began with an appealing range of activities for the public. On Sundays we organized the AfricaSundays: free activities by African artists in the museum's galleries.

On Sunday 19 January the museum was taken over by the fifth iteration of Congolisation (Festival Afro-Diaspo-Arts Made in Belgium) which took 'Links and Roots' as its theme. Congolisation focuses its attention on the Congolese and the African diaspora, raising questions about how and why the African diaspora occurred and about people of African origin. Do they stay connected to their country and culture of origin? The festival sees itself as a space in which to meet up and enter into dialogue. At the AfricaMuseum the hiphop dance of The Revolutionary took over the permanent exhibition space. It became an impressive meeting point between the present and the past and between stasis and movement.

The festival was held from 16 to 18 January 2020 at the Royal Flemish Theatre (KVS) and on 19 January 2020 at AfricaMuseum. The project's



On Sunday 19 January the museum was taken over by the fifth iteration of Congolisation (Festival Afro-Diaspo-Arts Made in Belgium) which took 'Links and Roots' as its theme.

initiator was Pitcho Womba Konga, a Belgian actor, Congolese-born rapper, and co-founder of Skinfama.

The last AfricaSunday of the year went ahead on 1 March with a live performance by the kora player Mamadou Dramé. Following this, the programme of events was brought to a halt out of necessity.

Redesign of the Grand Rotunda

The first press conference of the year was scheduled for 27 February when the redesigned Grand Rotunda was presented to the press. Opposite his monumental work *New Breath or Burgeoning Congo*, the Congolese artist Aimé Mpane installed a second sculpture: the skull of the murdered



Artists Aimé Mpane and Jean Pierre Müller next to their art works in the Grand Rotunda.

continued apace on preparations for the first temporary exhibition at the renovated museum. Meanwhile, further work was completed on the permanent exhibition space and a start was made on bringing about an audio tour for the blind and partially sighted. This tour will be offered to the public from the beginning of 2021 onwards. In order to continue to appeal to the general public even during closure we developed a virtual tour through the permanent collection on our website. Activities initially intended to be carried on *in situ* were transformed - successfully - into digital ones.

leader Lusinga. Subsequently, he invited the Belgian artist Jean Pierre Müller to go even further in confronting the rotunda's sculptural heritage, as well as the weight of history that it embodies. Their project RE/STORE consists of sixteen translucent fabric veils onto which contemporary images have been printed. These were then suspended at a short distance from the pre-existing sculptures. The overlap of the images creates a visual and semantic shock. Consequently, a new interpretation of a difficult legacy is made possible and its historic and ideological content is challenged.



A virtual tour through the permanent collection was developed during the lockdown.

MuseumTalks lectures allow a broad crosssection of the public to learn about the museum behind the scenes and to find out more about the work of scientists and collaborative work with African artists.

12 March 2020: the first lockdown

Shortly afterwards, on 12 March, the federal government decided on the mandatory closure from 14 March of all cultural activities, hotels, restaurants, catering and museums within the context of the coronavirus pandemic.

During the period of closure, the museum was teeming with activity behind the scenes. Work

Online programme

The first major online event, the film première of *Stop Filming Us* (Doxy Films in co-production with EODOCS) went ahead on 30 April, precisely 110 years after the official opening of the museum building in 1910, followed by a webinar debate. 1,164 people expressed their interest by participating in this event.

This first successful webinar was followed on

22 May 2020 by the documentary Last Male on Earth (Doxy Films), after which there was a debate on matters raised by the film (the militarization of conservation, African animal species under threat and the causes, and the Western perspective/presence in African conservation projects) with a panel of international/African experts.

The success of the online film showings inspired us to offer other aspects of our programming online, such as an online tour and the existing format of the MuseumTalks in an online version. MuseumTalks lectures allow a broad cross-section of the public to learn about the museum behind the scenes and to find out more about the work of scientists and collaborative work with African artists.

Ten MuseumTalks in 2020 gave the floor to researchers from both the museum and beyond it, screened documentaries and their discussion by an international panel of experts, and enabled artists and curators to provide explanations concerning the exhibition *Mabele Eleki Lola!* or their residency at the museum. Lectures responded to topical issues in a MuseumTalk organized to celebrate the sixtieth anniversary of the independence of the DRC or on the International Day for Biological Diversity.

Six MuseumTalks were organized in the form of an online webinar. These webinars attracted a total of 1,591 live (online) viewers. Just as in the case of the MuseumTalks at the museum, the webinar recordings can be viewed again after they have finished. All the recordings taken as a whole were viewed a further 3,157 times in 2020.

Sixtieth anniversary of the independence of the Congo

On 30 June, we commemorated the sixtieth anni-



Jean Omasombo Tshonda during his MuseumTalk 'La Décolonisation du Congo belge', which was watched live and subsequently viewed as many as 1,400 times in total.

versary of the independence of the Congo not only with an online seminar by Jean Omasombo – on the events during the last 24 months prior to the declaration of independence – but also with a number of special publications on the independence and postcolonial period of the Congo. The 2010 exhibition *Indépendance! Congolese Stories* was also placed online.

https://independance.africamuseum.be/en/



Visitors finding their way back to the museum after the lockdown.

Successful reopening in May 2020

Although the precise duration of the closure was unknown at the time of lockdown, the museum quickly seized the initiative in setting up a Coronavirus Advisory Board headed by a Coronavirus Manager to prepare for the reopening so that the museum would be ready when the government gave the green light to reopen the doors to the public on 19 May, albeit under strict conditions and subject to safety measures. In the first two weeks after reopening, the museum received some 4,000 visitors. They expressed their satisfaction concerning the quality of their welcome and the precautionary measures put in place by the museum in order to ensure their visit was a safe one. Sadly, we were unable to offer workshops for schools or events for larger groups of people. Alongside the museum, the AfricaShop also opened its doors to the public once again. Bistro Tembo remained closed for the rest of the year.

First temporary exhibition

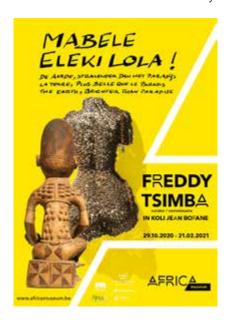
MABELE ELEKI LOLA! The earth, brighter than paradise

29 October 2020-21 February 2021 (extended until 15 August 2021)

The exhibition Mabele eleki lola! The earth, brighter than paradise, opened its doors as anticipated on 29 October 2020, albeit with an alternative, entirely corona-proof preview and press conference.

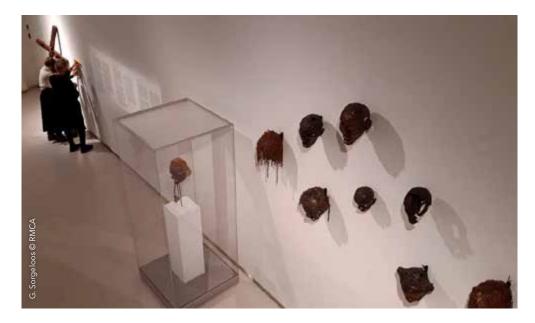
This exhibition has the Congolese artist Freddy
Tsimba entering into dialogue with the museum
collections. The exhibition curator is the writer
In Koli Jean Bofane, with scientific input coming
from Henri Bundjoko, the director of the National
Museum of the Democratic Republic of Congo
(Kinshasa). According to the artist, the title of the
exhibition refers both to the need to live above
all in the here and now, as well as to the resilience
demonstrated by the Congolese on a daily basis.
This exhibition ties in with efforts for greater
openness and museum collections that are more
accessible. Congolese artists have been working
in residence at the AfricaMuseum for some years

now. Through this exhibition Freddy Tsimba and Jean Bofane are unlocking a part of this Central African legacy in dialogue with contemporary creations. This exhibition was brought about in collaboration with Africalia, Wallonie-Bruxelles International and the National Lottery.





In Koli Jean Bofane and Freddy Tsimba.



Heads with dreadlocks made from chains form part of a series of some ten heads. To create the series the artist has molten down ammunition cartridge cases and salvaged materials.

Immediately on entering the exhibition, this work can be seen beside a dipola mask (Salampasu culture) from the museum's collection. This mask is clad in copper plates. It belongs to the secret association Ngongo Munyenge.

The spectre of religion is a strong presence. After all, it can have a paralyzing effect on personal strength to a significant degree. According to religion, paradise is the ultimate goal and people must forget the earth. Freddy Tsimba puts this hypothesis into question.



In 2011 a revival church (Église du Réveil in French) relocated next to Freddy Tsimba's studio in the Matonge district of Kinshasa. The air was soon filled with the sound of sermons, making it impossible to work in peace. Tsimba, irritated by the persistent noise, created a work which he subsequently installed on his plot of land. The sculpture of a woman skewered by a cross, visible to all, succeeded in sending a revival church packing, along with its accompanying riot of adjurations. Paradise is not elsewhere, but here. Shocked at the sight of the installation, the church moved premises at once. This art work was the first in a series of nine women, all of them seated, with crosses piercing their bodies.



Strength emanates from the women's backs, made from chains. Freddy Tsimba believes unconditionally in the exceptional power vested in women.



Femme-ciseaux (Scissors Woman) (2017) is made from scissors once used in hospitals. Since the beginning of the 21st century in the DRC, women's bellies have been sacrificed in the quest for strategic minerals, thus paving the way for the mining of materials through systematic violation and mutilation.



The component of war is inherent in the artist's work. This 'Machete house' was made in Kinshasa and installed one evening at the Marché de la Liberté, the second largest market in the city. By morning, it had already become news throughout the city. The aim of this work was to draw attention to massacres during the wars in Central Africa. Freddy Tsimba does not shy away from paradoxes; the machete is first and foremost a household implement, while a house is symbolic of hope and the upbringing of children.



How to represent Kinshasa, the capital of the DRC swirling with life and the centre of power? A failing force, as can be seen in this car being pushed by the people. The car has no engine; it is the people who push it forwards. For Freddy Tsimba this vehicle is symbolic of the DRC; the country no longer has any engine.

Encore un effort... (Give it another shot...) (2011) is made from scrap materials, recycled forks, spoons and iron.



The keys to what paradise?

A participatory project also forms part of this exhibition. The question posed is: 'what form does paradise take when you are holding its keys in your hands?' Visitors can take a scrap key and attach a label bearing a message. In this way each visitor can participate in an artistic installation that reflects the work of the artist Freddy Tsimba.

THIS EXHIBITION WAS MADE POSSIBLE IN PART THANKS TO THE SUPPORT OF











It quickly becomes apparent that Freddy is an artist with an extremely open mind, bursting with creativity, enthusiasm, and an honest, critical attitude. His art works are truly the embodiment of his vision of the world, the earth, paradise and the people who live there. You need to be passionate about making works of art such as these, because anyone who spends days, nights and months welding together hundreds of keys or spoons ... well, need one say more? To do this requires an intense degree of craftsmanship and patience. While mounting the exhibition, I had the honour to help Freddy make repairs to a sculpture composed of keys. An arm had fallen off while it was being transported. It soon became clear to me that this was not the sort of repair work that could be completed in a day or so. Not at all. This work is by an artist whose approach to his craft is utterly meticulous; time diminishes and the focus is directed on making and creating. When you are involved with something like this a morning passes like an hour and there is no room left in your mind for other concerns. This is something that Freddy and I also chatted about. There was plenty of time for us to philosophize together

Freddy had a container full of keys that he welded to the sculpture, one by one. Precisely why he chose the types of key that he did from his stockpile was a mystery to me; however, slowly but surely, the sculpture's arm became ever firmer as he attached more and more keys to it with his silver solder. I was just starting to think that the arm surely had to be strong enough when he began to turn the object this way and that to see whether it really was completely sound and stable. His perfectionism and tenacity were astonishing... inspirational! In the end the restoration took several days and what I learned from it is that, fortunately, the rules for art are not set in stone; in fact, it is a continuous process of change in which art is a truly living thing, and as a museum visitor/employee sometimes you have to take a little more time to consider how a work of art was brought into being and what lies behind it ... to consider what is the

Stef Keyaerts, staff member, Archives and Collection Management - Conservation Lab

Freddy for an enjoyable and instructive experience!

soul of the piece. That way you get a better sense of the work. Thanks





Summer programme

The concept of the 'standing guide' was introduced during the summer holidays. Every Sunday afternoon during the summer holiday period a guide would give explanations about the sculptures in the grand rotunda in Dutch, French and English. Sadly, owing to tightened coronavirus measures, we had to call to a sudden halt the other initiatives that were launched at the start of the summer holiday season; these included the guided tour for individual visitors, AfricaSundays, MuseumWalks (short, free and themed tours for families and their children) and the Music Workshop Family Edition (short, free Muziki workshops for families with children aged 6 and above).

28 October 2020, second lockdown - 1 December 2020, reopening of the museum

In mid-October, measures to combat coronavirus were tightened again and on 29 October, the day after the preview and press conference for *Mabele eleki lola!*, we had to close our doors once more for a second lockdown lasting until the end of November. Artists and all lenders were contacted immediately with a view to extending the exhibition until 15 August 2021. Yet again we switched over to wholly digital activities until the museum was able to open its doors once more on 1 December. For the AfricaMuseum this meant a third reopening in the space of barely two years! All previous measures to ensure safety when visiting the museum (mandatory face masks, social distancing, hand hygiene, fixed one-way walking routes, advance reservations, etc.) remained in force, and visitors could also visit the exhibition in person one month after the official opening. Both the press and our visitors were enthusiastic about *Mabele eleki lola!* The earth, brighter than paradise. During the Christmas holidays 'standing guides' throughout the exhibition were in place to provide visitors with more information. During that period in excess of a thousand visitors came to the museum each day.

Financial impact

Although healthy visitor figures over the Christmas period meant that the museum was still able to end the year with a total of approximately 100,000 visitors (as opposed to 360,000 in 2019), the museum's closure did result in a considerable loss of revenue. Reduced income from ticket sales, concessions and cancelled events amounted to almost €1.5 million.

Debating forum

Although the museum was closed for a great part of the year, operations did keep going in many areas and the museum continued to be an omnipresent feature in the press as well. For example, there was unprecedented media interest in 2020 concerning the consequences of the Black Lives Matter movement and the colonial past. The bust of Leopold II in the park was doused with red paint - not for the first time. This bust is part of a sculptural group that in 1998 was placed in the park right next to the museum by the Federal Buildings Administration on the initiative of Tervuren's local history society. Once again, this incident underscored the necessity for more openness and debate about the colonial past. A special parliamentary inquiry committee on the colonial past was founded to bring greater clarity on Belgium's role and responsibility in that regard. The museum was closely involved in the functional description and choice of experts for this parliamentary committee, which also visited the museum to familiarize itself with its activities. The report by these experts is expected to be published early in 2021. The parliamentary committee will then

organize hearings on a number of topics, after which recommendations will be formulated for the federal parliament's consideration.

Within the same context, there was also a lot of interest concerning the issue of restituting cultural heritage. With that in mind, priority was given to investigating provenance, which requires thoroughly researching the way in which objects were acquired. We launched a 'Controversial Origins' tour route through the permanent exhibition aimed at providing a nuanced view of the complex issues surrounding acquisition, conservation, appropriation, accessibility and restitution. This route is in no way either fully comprehensive or definitive and it will be supplemented continually with results from the provenance investigations. In addition, over the past year the RMCA has developed a restitution policy which was published on our website and has initiated a 'Scientist-in-Residence' programme in which African scientists can conduct research into the provenance of collection items. Unfortunately, owing to the coronavirus pandemic, the residencies for artists, journalists and now scientists had to be postponed until 2021.

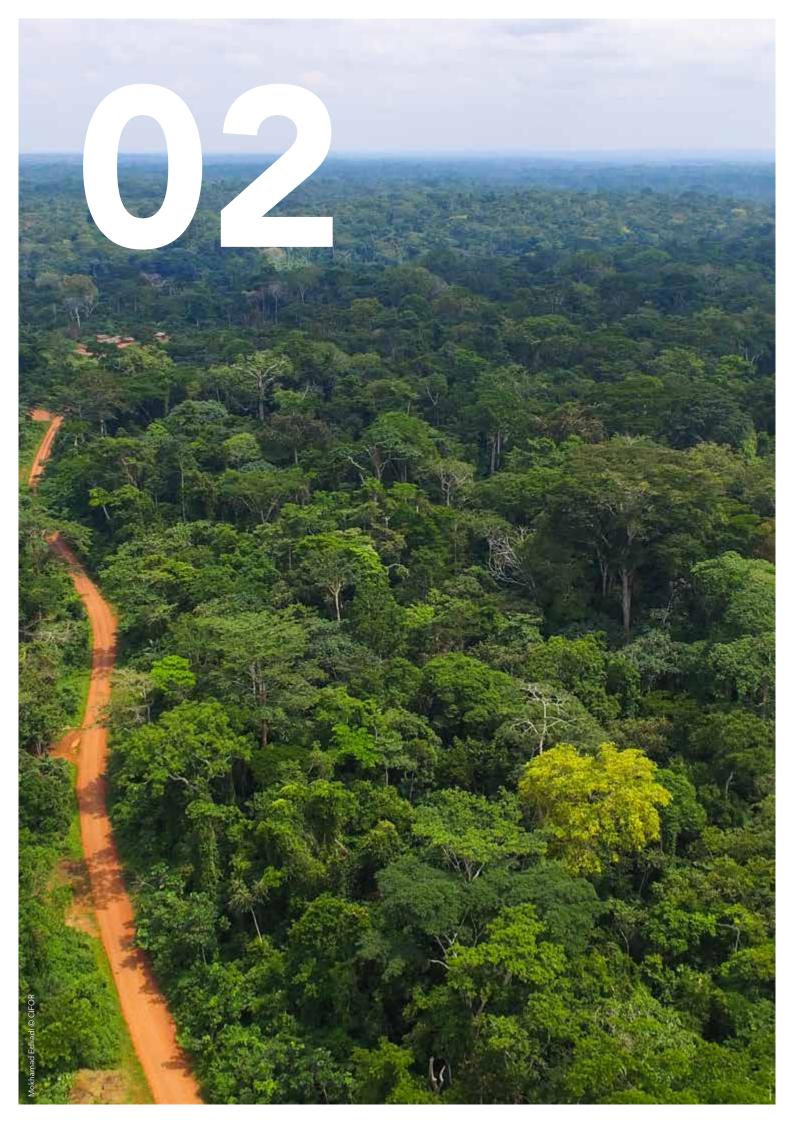
https://www.africamuseum.be/en/about_us/restitution



The bust of Leopold II in the park was doused with red paint - not for the first time.

Partnership with the Institute of National Museums of Rwanda (INMR)

The RMCA was asked by the INMR to provide guidance and to work together in partnership with regard to the renovation of its museums, the most important of which was founded in 1987 in Huye (formerly Butare) with great scientific and logistical support from the RMCA and with funding from Belgian Development Cooperation (DGD). April 2020 saw the setting up of a workshop in which a number of RMCA personnel participated. As a result of the coronavirus situation, that conference was unable to go ahead in Huye as planned. Instead, it was replaced with a digital conference in November 2020. This digital conference lasted a week and a number of foreign experts took part in it, as did personnel from several of the departmental services both at the RMCA and at the National Museums. These positive experiences using digital communications will continue to influence the way that the AfricaMuseum and African partner countries work together in the future.



JU M S

The RMCA as a scientific institute: research into the societies, biodiversity, and geology of Africa

The Royal Museum for Central Africa is a research institute with internationally-recognised expertise. More than 75 scientists and around 120 African PhD students and trainees conduct research into past and present societies, biodiversity, and geology of Africa. They rely on the museum's unique collections, fieldwork, and collaborative networks with international, and in particular African, institutions. The RMCA is active in more than 20 African countries and emphasises the exchange of knowledge with its African partners, as well as capacity-building. Contributing to the sustainable development of Africa is a priority in the research programmes, with a significant environmental, social and economic impact.

The RMCA has three research departments >>



1. CULTURAL ANTHROPOLOGY & HISTORY

FOCUS Societies of the past, the colonial past, political systems, cultural expressions, languages and music of peoples in or from Africa.

The Cultural Anthropology and History department covers various disciplines dedicated to African societies of today and the past, in particular how they functioned and what they achieved. The researchers study languages, deep history and archaeology, the (post)colonial past, political systems, cultural expressions, and music of population groups in or from Africa. The fieldwork is done in Africa, but also among the African diaspora.

2. BIOLOGY

FOCUS Biodiversity of animal species and sustainable management of the tropical rainforests in Africa.

The Biology department enhances the knowledge of the biodiversity of animal groups in Africa. The biologists study the taxonomy and phylogeny of different groups of vertebrates and invertebrates. The wood biologists unravel the structure and function of wood, as well as the role of trees and fauna in African ecosystems, and contribute to the sustainable management of the tropical rainforests in Africa. The fieldwork goes hand in hand with the study of the vast and unique collection.

3. EARTH SCIENCES

FOCUS Mineral resources, geodynamics, surface environments and natural hazards in Central Africa.

The scientists in the Earth Sciences department study the geology, geodynamic processes, and natural (mineral) resources in Central Africa with a view to sustainable management and the impact of extraction on human societies. They study volcanoes, seismic events, and landslides for the effective management of these natural hazards. By determining the evolution of soils in Africa, they evaluate the impact of global changes on the natural environment of the continent.

A selection of the most important research activities from 2020 is highlighted.

Have we driven the lungs of the planet to their limit?

Intact tropical forests slow down climate change by removing carbon from the atmosphere and storing it in trees. Most globally applied climate models predict that this carbon sink will continue to work at full capacity for some decades to come. However, carbon fixation by tropical forests has already started to undergo an alarming downward trend. The first broad-based evidence for this comes from a study into three decades of tree growth and mortality in respect of 300,000 trees in 565 undisturbed tropical forests in Africa and the Amazon. The feared transition from carbon sink to carbon source has already begun. These ground-breaking insights were published in the renowned journal *Nature* by an international team of scientists led by the University of Leeds and the RMCA.

Carbon fixation peaked in the 1990s. By 2010 that capacity had been cut on average by a third. This process is largely driven by increasing tree mortality. Additional CO_2 in the atmosphere stimulates the growth of trees, but this effect is being increasingly counteracted by the negative effects of higher temperatures and drought. These factors slow down tree growth and lead to death, after which the stored carbon is released back into the atmosphere again.

Using statistical models, the researchers predict a protracted deterioration of Africa's carbon sinks in the future. The carbon sink of the Amazon is set to become a carbon source by around 2035. This is decades sooner than that assumed by even the most pessimistic climate models.

Tropical forests still remain crucial and vast reservoirs of carbon. However, this study by nearly one hundred scientific institutions demonstrates that it is only a matter of time before they start accelerating climate change as a carbon source rather than delaying it: alarming results suggesting that CO₂ emissions must be reduced to zero even faster than envisaged.

https://www.africamuseum.be/en/research/discover/news/tropical_forests_carbon_sink



Carbon fixation by tropical forests has started to undergo an alarming downward trend.

8,000 and 3,000-year-old DNA shedding new light on the history of human habitation in Africa

A study published in the scientific journal *Nature* is providing greater insight into the diversity of our ancestors in sub-Saharan Africa in terms of their distribution and differentiation. For example, there are at least four modern human lines of descent that diversified around 250,000 to 200,000 years ago and can be detected in modern humans. This supports archaeological data indicating the importance of this period in the evolution of human beings in Africa.

A key element in the study is the archaeological site of Shum Laka in north-western Cameroon. It is from here that Bantu speakers are thought to have begun spreading out across the whole subcontinent more than 3,000 years ago. However, their region of origin had remained a blind spot on the archaeological map. Archaeologists from the Université libre de Bruxelles, the RMCA and the University of Yaoundé carried out a series of excavations at this site. Between 1991 and 1994 excavations revealed the oldest extant human remains from two burial phases dating back to approximately 8,000 and 3,000 years ago. However, owing to the passage of time it had become difficult to unravel the poorly preserved DNA from these skeletons, which would have helped us understand the present-day population groups that could claim descent from these people, as well as the link between the burial phases. After various attempts, a team from Harvard University succeeded in reconstructing the full genome - an organism's complete genetic composition - from four skeletons, having taken two from each burial phase.

Despite the 5,000-year time difference, these genomes appear to bear very close resemblances to one another. This indicates remarkable continuity in terms of habitation in the region. Moreover, one of the 8000-year-old skeletons had a particularly rare A00 haplotype on its Y-chromosome, which nowadays occurs exclusively in that part of Africa. It is the first time that this haplotype has been found in ancient DNA. Still more surprisingly, when comparing different populations in sub-Saharan Africa it emerged that the four genomes were far more closely aligned to those of Central African hunter-gatherers than to those of Bantu agricultural populations.

https://www.africamuseum.be/en/research/discover/news/shum_laka



Aerial photograph of excavations at the archaeological site of Shum Laka in north-western Cameroon.

Research on karst as a major contribution to sustainable development

Central Africa has carbonate deposits (limestone, dolomites) that provide mineral resources needed in construction (gravel, cement) and also serve as major water reservoirs (aquifers). These formations can be dissolved, leading to the development of typical karst phenomena such as caves and sinkholes. Local inhabitants and authorities, and even Congolese geologists, have a poor understanding of these largely underground phenomena. But in urban areas, karst phenomena can be behind geological collapses that affect human lives and infrastructure, as seen in the city of Mbujimayi (DRC).

To address this issue, geologists from DRC and the Republic of Congo are awarded grants to specialize in the study of karst formations, as part of the RMCA framework agreement with Belgian Development Cooperation (DGD): 'Georesources for sustainable development'. For their research, conducted with RMCA geologists, they investigate karst in the cross-border calcareous area between Kongo-Central (DRC) and Niari (Republic of Congo).

Scientific understanding of karst is essential for both geological and societal reasons. In addition to being a mineral resource and water reservoir, karst is also a reserve for endemic cave-dwelling animals, a favoured location for archaeological and ethnographic surveys, and a potential source of tourism revenue thanks to spectacular caves. It is also a fragile, risk-laden environment because of the potential for collapses and cave-ins, and the great vulnerability of its waters to pollution. A better grasp of this highly particular milieu would allow Congolese scientists to be more accurate in identifying risk zones, areas of scientific, societal and touristic interest that should be preserved, and sites that can be used as sources of raw materials. They can then provide authorities with proper guidance for better management of this rich and fragile environment.



Spectacular column and draperies in the Ndimba-Dimba cave, Kongo-Central



Large sunken area in Mbujimayi where karst lies beneath a sandstone layer. The path originally lay flat at the top level of the stairs, which were built after the ground collapsed.

30 years of FishBase: a global source of information for fish biology, fisheries, and conservation



In 2020 FishBase celebrated its thirtieth anniversary. FishBase is the largest and most successful online fish database in the world, containing a vast amount of digitized information on more than 34,400 known fish species (including their taxonomy, morphology, ecology, distribution, population dynamics, etc.) and various practical tools. Illustrated with more than 60,300 images, and listing 326,800 vernacular names of fishes in 350 languages, FishBase is the global working tool of choice for ichthyological research and for fisheries, aquaculture, and biodiversity management. The statistics speak volumes. More than 300,000 unique visitors consult the database some 700,000 times a month, downloading around 1.3 terabytes of data. FishBase was cited in more than 2,260 publications, including dozens of entries in Science and Nature, the most prestigious scientific journals.

As a co-founder of the international FishBase consortium, the RMCA is responsible for the data concerning the approximately 3,500 species of African freshwater and brackish water fishes. In order to provide scientists and decision-makers with the best possible digitized scientific information available, a team of RMCA ichthyologists is responsible for continually updating the data. The RMCA's strong contribution makes the continent of Africa one of the best covered regions in Fish-Base.

Given that the RMCA is a centre of expertise for African ichthyology, education is its second important objective. 80 scientists from 21 countries have now received training since the inception in 2005 of a three-month comprehensive training course on fish taxonomy and the use of FishBase that is offered annually to five African scientists. Former trainees can now be found occupying important positions in scientific institutions and universities in Africa. Local training sessions and FishBase symposiums are also organized at the five-yearly conference of the Pan-African Fish and Fisheries Association (PAFFA). FishBase for Africa activities are financed by Belgian Development Cooperation (DGD).

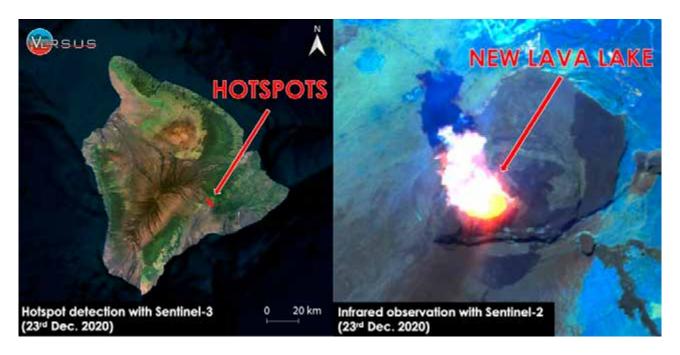
www.fishbase.org
http://www.fishbaseforafrica.org/
https://www.youtube.com/watch?v=yi9nJV1RYfE





The RMCA's strong contribution makes the continent of Africa one of the best covered regions in FishBase.

New satellite sensors to gain more insight into the dynamics of persistent lava lakes



Hotspot detection over Kilauea volcano (Hawaii) during the birth of a new lava lake, on 23rd December 2020. On the left, hotspots detected using a Sentinel-3 SLSTR image (spatial resolution: 1 km). On the right, identification of the detected hotspot using a Sentinel-2 image (spatial resolution: 20 m).

The project VeRSUS aims at exploring and developing the capacity of new satellite sensors to provide complementary quantitative information on the dynamics of persistent lava lakes. Persistent lava lakes are scarce phenomena that can be seen as magmatic chambers at ground surface. Studying them helps to understand the effect of pressure changes in volcanic systems and eventually, detect upcoming hazardous flank eruptions. To perform this research, three volcanoes in two distinct volcanic regions were selected: Kilauea (Hawaii, USA), Nyiragongo and Nyamulagira (Virunga Volcanic Province, DRC) volcanoes.

One of the key aspects of VeRSUS is the use of all the operational European 'Sentinel' constellations (ESA Copernicus Program), i.e., Sentinel-1 (radar), -2 (optical), -3 (thermal) and -5 Precursor (gas measurements). By using the sensors of all these satellites, it is possible to combine time-series of measurements of ground deformation, lava lake level, hotspot and volcanic heat, and gas (SO2) emissions. Together with field monitoring data, these satellite measurements provide additional insights into the on-going eruptive activity and help interpret the magmatic processes controlling it.

In VeRSUS, RMCA researchers are active in radar remote sensing for the measurement of lava lake level changes, in photo-

grammetry for the measurement of topographic changes (e.g., crater collapses, lava accumulation), and in thermal remote sensing for the detection of hotspot and the measurement of the volcanic radiative power coming from the persistent eruptive activity.

VeRSUS is an 'Exploration Project' funded by BELSPO under the STEREO-III Programme. It is coordinated by the RMCA, in collaboration with the Royal Belgian Institute for Space Aeronomy (BIRA-IASB), the European Center for Geodynamics and Seismology (ECGS, Luxembourg) and the U.S. Geological Survey (USGS, USA). The project started in July 2019 and will run until July 2022.

http://resist.africamuseum.be/VeRSUS

Politics, peace-building and digital restitution in north-eastern Congo

In the north-eastern Congo, a region stricken by a succession of violent conflicts, old political traditions are becoming increasingly important. In local government there has been a resurgence of customary law. This exercise of power is of a type dating back in part to precolonial traditions, and one that has continued to exist during the colonial and postcolonial period as well. This revival goes hand in hand with a growing interest in the past and its material dimension. Examples of this include the objects that illustrated the status of traditional leaders, such as headdresses, ceremonial knives or musical instruments. Owing to the colonial craze for collections and political upheavals, these (and other) ritual objects disappeared from the communities. Many of these tangible testimonials ended up in the museum in the colonial period.

With regard to the Afrisurge research project, financed by the Belgian Federal Science Policy Office (BELSPO), the RMCA is working in partnership with the universities of Uele, Ghent and Antwerp. The project will be closely examining contemporary political culture in north-eastern Congo. Further to this, research into ritual objects in the RMCA collection and their provenance will shed new light on the current discourse concerning authority and legitimacy in the region. The researchers will also be examining the potential of reinstated reminders of and access to this lost heritage by means of digital restitution. The specific form that this takes has yet to be determined in terms of what is desirable and feasible, in collaboration with the interested parties. Through in-depth consultation with the partners concerned the researchers hope to be able to develop a model for sustainable physical restitutions in the future.

https://www.africamuseum.be/en/research/discover/news/ afrisurge



Headdress. Faradje, Haut-Uele, DRC [Mambutu/Azande]. Collection RMCA, EO.0.0.10206.



Niangara traditional courthouse built under colonial rule, early 20th century, Haut-Uele, DRC. The interior and exterior mural paintings testify to a regional tradition and refer to local sayings and fables about jurisprudence.



Chef Djabir with a painted house in the background. Bas-Uele, DRC [Azande]. Photograph taken during the expedition led by A. Hutereau, 1910-12. Collection RMCA, AP.0.0.12198.

The pollinating Diptera of Africa

For almost ten years, the Invertebrates Service of the Department of Biology has been conducting expeditions in sub-Saharan Africa to study pollinating insects. The focus is on twowinged insects of the order Diptera (true flies and mosquitoes) whose contribution in pollination is still very much underappreciated. Nevertheless, flies are known to pollinate a large number of wild flowering plants as well as important agricultural crops. Among the Diptera, hoverflies or flower flies (family Syrphidae) are the most important pollinators. However, keys to identify Afrotropical hoverflies are outdated and incomplete. RMCA entomologists have published two new identification keys for the genera Phytomia and Senaspis, both of which are richly illustrated with high resolution photographs of all species, including three species new to science. Other hoverfly genera are now under taxonomic revision and for Benin, Burundi, Togo, Uganda and South Africa, hoverfly checklists are prepared. These results are a necessary first step to ecological studies on the contribution of true flies in pollination networks. This research is conducted through three projects: The 'Pollinator Information Network for Two-Winged Insects (Diptera) (PIN-DIP)', financed by the JRS Biodiversity Foundation, the 'Diptera Museum Collections as a Source for Taxonomic Research and Teaching Activities (DIPTATEACH)', a network project funded by the Belgian Science Policy and the National Research Foundation of South Africa, and the 'Diversity of Pollinating Diptera in South African Biodiversity Hotspots (DIPoDIP)', funded by the Directorate-general Development Cooperation of Belgium. The research is a collaboration with partners from Benin, Kenya, Tanzania and South Africa. Together with these partners, training courses are organized (in Tanzania and South Africa) for further knowledge transfer to the African research community. The Invertebrates Service has created a project website where additional information can be found and project results are shared, such as 600 high resolution photographs of pollinating Diptera from the Afrotropics.





A potentially new species of the hoverfly genus Eristalinus, feeding on flowers in Bwindi Impenetrable National Park (Uganda).



Group picture of the second training course on pollinating Diptera (Morogoro, Tanzania).

SURFACE ENVIRONMENTS AND COLLECTION MANAGEMENT

The growth of the early continental crust



Field photograph of deformed 3.41 billion years old pillow basalts from the Nondweni greenstone belt in South Africa. Pillow basalts are formed by the lava flowing under water. Light-grey-pink domains represent deformed pillow cores while dark-grey bands represent the deformed pillow rims. The initial rounded shapes have been strongly stretched at a temperature above 500 °C.

The Earth is unique among the rocky planets of the solar system in possessing a thick felsic continental crust. A number of recent models are converging to indicate that the continental crust had 65-70% of its present volume by 3 billion years ago. Sodium-rich granitoids of the tonalite-trondhjemite-granodiorite (TTG) group compose the bulk of this early phase of continental growth. Establishing how these granitoid rocks were formed, and determining how their petrological differences occurred, are thus critical for understanding how the continental crust grew in this early phase and why it is unique among the rocky planets. Considerable controversy surrounding their genesis remains; however, it is essentially because felsic magmas can be generated by a plentitude of processes, from the differentiation of various basaltic melts or through a large spectrum of melting conditions. Faced with this diversity of processes, major and trace elements, as well as radiogenic and traditional stable isotopes, are poor discriminants for tracing the ultimate mantle source of a great majority of granitoids. Silicon is the second most abundant element after oxygen in the continental crust. As such, it is the major characteristic feature that distinguishes the continental crust from the other major Earth reservoirs. Defining the source of silicon in the early continents through a study of its isotopic composition (830Si) and its pseudo isotope, germanium, is therefore a potential way to solve this on-going debate.

BIOLOGICAL COLLECTION AND DATA MANAGEMENT

An inventory of Diplopoda and other myriapods of Mayotte

Little is known about myriapods, familiarly called millipedes and centipedes. Despite this, they are excellent bioindicators of the ecological status of land-based ecosystems. RMCA scientists surveyed these terrestrial arthropods on Mayotte, an island that belongs to the Comores archipelago. Following a field campaign on the island in November 2019, they drew up an inventory of myriapods which also included the specimens in the Mayotte collections of the RMCA and the Muséum national d'Histoire naturelle of Paris. Surprisingly and counter-intuitively, the largest myriapods were not necessarily the best-known. In Mayotte, several large species were new to science and endemic to the island, as exemplified by Sechelleptus arborivagus, a new species described for the inventory.

The research led to a new publication released in early 2021. The richly-illustrated guide provides an overview of the diplopod and other myriapod species found in Mayotte, and also explains how to collect, inventory, and identify them. In addition to completing national and international taxonomic knowledge, it was written to satisfy the curiosity and interest that the island's residents harbour for their natural heritage. Deliberately designed to be accessible and widely available, the guide is an example of science communication in the service of conservation.

The guide is part of the RMCA 'Zoological Documentation Online Series' and is available on the museum website. The project was co-funded by the Ministère de la Transition écologique et solidaire (MTES-France) and the RMCA.

https://www.africamuseum.be/en/research/discover/publications/open-access/zoology



HOME: a research project on human remains in Belgian collections

HOME (Human remains Origin(s) Multidisciplinary Evaluation) is a federal scientific project on human remains held in Belgian collections. It involves seven partners and is financed by BELSPO. The focus at the RMCA is on potential plans for the restitution of human remains originating from the DRC.

The initial focus within the RMCA relates to the multidisciplinary evaluation of origin. Research on the collections of human remains and restitution plans entails topical legal, scientific and anthropological-historical questions concerning the various contexts in which the collections were created. Historical documents have already provided relevant insights into the collections that were amassed within the framework of anthropometric research in the Belgian Congo, as a result of archaeological excavations, or as the spoils of war during an early phase of colonization. A second component consists of setting up a multifocal partnership of stakeholders and relevant partners. 2020 saw the first steps taken in building a cooperation network in the DRC, which is where the majority of the human remains originated. Capitalizing further on the historic link with the Institut des Musées nationaux du Congo (IMNC), the museum entered into partnerships with Waza, pioneer of the restitution debate in Lubumbashi, and Collectif Faire-Part, an ensemble of filmmakers in Kinshasa. Together, they have entered into dialogue with relevant family members, experts at universities and museums, political stakeholders and local communities. Finally, in collaboration with the museum's Public-oriented Services, representatives were invited from the Congolese Women's Diaspora Association, BAMKO-CRAN, and the Collectif Mémoire coloniale et Lutte contre les Discriminations (CMCLD) to enter into talks with HOME researchers.

HOME aligns with the AfricaMuseum's current restitution policy and is being steered through the Cultural Anthropology and History Department in partnership with Public-oriented Services. Provenance research concerning physical anthropology is done within the History and Politics service, while archiving of archaeological excavations is done at the Heritage Studies service, and research into the diaspora and inclusive partnership is done within the Culture and Society service. The Collection Management and Archives service is providing support for archives and collections.

https://www.africamuseum.be/en/research/discover/news/home1



The museum's grand rotunda contains a sculpture by Congolese artist Aimé Mpane. It represents the skull of the leader Lusinga and was installed in February 2020. In 1964, Lusinga's skull was transferred to the Royal Belgian Institute of Natural Sciences in Brussels.

Third 'Digital for Development (D4D)' Awards

On 15 October 2020, the Minister for Development Cooperation and Urban Policy, Meryame Kitir, handed out the third 'Digital for Development (D4D)' Awards following the recommendation of a panel of experts. Every two years since 2016, the RMCA has organized the D4D Awards with the support of the Directorate General for Development Cooperation and Humanitarian Aid (DGD). However, the accompanying innovations fair, an important networking event, could not go ahead along with this third outing of the awards owing to the global pandemic. The awards ceremony was filmed for the nominated projects' partners who could not be present as a result of travel restrictions.

The D4D Awards honour initiatives that employ digitization as a stimulus for development. This relates to projects and ideas that harness the potential of (new) technology in innovative ways in line with the Sustainable Development Goals (SDGs). There are three categories: 'iStandOut', the success story; 'iStartUp', the innovative concept, and 'iChoose', the public's award. With regard to the awards for 2020, submissions came from 21 different countries, 75% of which were African partners. The three winners were: e-glasses for healthcare in the DRC, digital savings programmes in Uganda, and a platform for inclusive education in South Africa.

In the jury's view, the project 'Smart Glasses 4 Health' was demonstrably the best success story (iStandOut). This project introduces telemedicine through e-glasses in Kingandu (Kwilu, DRC) in order to improve access to high-quality healthcare. Thanks to these glasses, healthcare providers are able to show a remote expert (the hospital doctor) precisely what they can see, as well as confer and take instructions, while keeping their hands free.

The project AKABOXITECH claimed the award for the most promising innovative concept (iStartup). Local entrepreneurs developed a digital financial inclusion system for small-scale farmers in Uganda, principally women and young farmers in rural communities. The system allows them to monitor and manage their savings in a safe, digital and user-friendly manner. The public's award (iChoose) was for 'Bambanani – Joining hands to teach every child', a project that develops learning resources for the inclusive education of children in South Africa. In order to inform teachers or educational guidance services about how to take an inclusive approach to teaching, the platform FundaOER.org contains a wealth of open educational resources to inspire them in their everyday teaching.





The Minister for Development Cooperation and Urban Policy, Meryame Kitir, bestowing the third 'Digital for Development (D4D)' Award.



The nominees for the D4D Award with Minister Meryame Kitir.

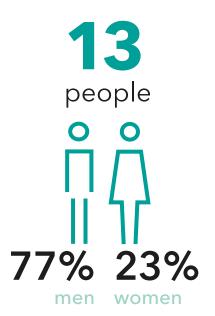
13 African researchers in (extended) residence at the RMCA for training or research through DGD

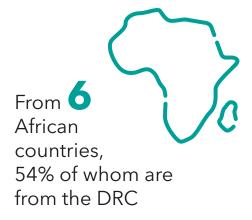
For many years now, and thanks to financial support from Belgian Development Cooperation (DGD), the RMCA has been organizing study visits and training courses for young African researchers. These take place both at the museum and in the field within the projects set up in Africa. The objectives of the projects and the capacity-building programme have been based on the United Nations' nine Sustainable Development Goals (SDGs).

Activities within this programme are wide-ranging. They involve not only scientific or technical training courses – whether for individuals or groups – but also scholarships for undergraduates, PhD students, postdoctoral study, and participation in conferences, as well as training for artists or journalists in residence. Owing to the global pandemic, only a limited number of study visits were able to go ahead in 2020. Thirteen African researchers completed a scientific research visit within the DGD programme at the RMCA, chiefly within the context of the annual training course relating to FishBase and the taxonomy of African fish, as well as for the HARISSA project concerning natural risks in Central Africa.

As a result of closed borders and the shutting down of international aviation, all residencies were extended for our visiting African scientists at the museum. Nevertheless, their research activities and training courses were continued as far as possible in a safe and appropriate manner, which included the use of video conferencing. Ultimately, all of the researchers were able to return home safely, following a long period of uncertainty for some of them.

Scientific study visits for African researchers with support from DGD







PhD students from the HARISSA project during their residency at the RMCA.



FishBase trainees during their residency at the RMCA.



Within the context of the ATRAP project, financed by DGD, networks of civilian scientists are being launched in Uganda and the DRC to monitor freshwater snail populations, which spread diseases such as schistosomiasis. In March, a team of 25 civilian scientists was trained in Uganda.





On 10 July at the KU Leuven, Bauchet Katemo Manda (UNILU, DRC) defended his thesis on the diversity, ecology and sustainable management of the fish fauna in the Upemba National Park (DRC). His PhD research was conducted within the framework of the DGD-funded projects Mbisa-Congo I and II. On 7 December, Manda explained his research in an online MuseumTalk.



In May, the Journal of Fish Biology published a special edition on African freshwater fish. Four Congolese researchers and personnel from the Mbisa-Congo project were the first authors of four articles in this edition, each of whom described at least one new species in the Congo Basin.

https://www.africamuseum.be/en/research/discover/news/mbisa_special_issue_JFB

https://www.africamuseum.be/en/research/discover/projects/mbisa/bauchet_katemo_manda_phd

Publishing in a pandemic

Despite Covid-19, the Publications service did not remain idle as volumes continued to appear for the different scientific journals and collections, not to mention the texts for the *Mabele eleki lola!* exhibit and its catalogue. Last but not least, for the 60th anniversary of the independence of the DRC, the RMCA (co-)published important books that were awaited by the expert group of the parliamentary commission on the colonial past.

Lockdowns certainly had an impact on sales as the shop had to close its doors for two periods, like many other bookstores in Belgium and abroad. Turnover decreased by 31%, akin to the results we had when the museum was closed for renovation.

Books for the 30th of June

On the day of the 60th anniversary of Congo's independence, the RMCA organized a MuseumTalk (see page 10) where Jean Omasombo Tshonda presented his latest work, published in



record time since the manuscript was submitted only three weeks earlier: La Décolonisation du Congo belge. La gestion politique des vingt-quatre derniers mois avant l'indépendance.

The virtual event served as the occasion to launch the online version of the *Indépendance! Récit congolais* exhibit held in 2010 as well as the release of the book *L'Indépendance du Congo et ses lendemains* that followed from it.

partner in the publication of the book *Koloniaal Congo. Een* geschiedenis in vragen ('Colonial Congo. A History Through

Finally, the RMCA was an active

Questions'). Several RMCA researchers made contributions to the book, and the museum supported *Le Congo colonial*, a French version which was indispensable for dissemination in Central Africa.

European Journal of Taxonomy

The Impact Factor announced in June 2020 for the journal's performance in 2019 was 1.393 (compared with 1.188 the previous year), a major step that puts the journal in the top spot, ahead of its competitors *Zootaxa* (0.990) and *Zookeys* (1.137). Out of a total of 175 articles, only 6 articles by eight African authors were published in EJT in 2020. While still low, this per-

centage is growing. Numerous volumes covered species in Africa, some of which were described by RMCA scientists (see list next page).

Book donations for two Kinshasa libraries

The RMCA was contacted by the Centre Wallonie-Bruxelles and the Texaf Bilembo cultural centre, both based in Kinshasa, for help in expanding their library offerings to a wide range of users that includes artists, students, and researchers. A collaborative effort led to the preparation of two batches of books. While the shipment from the Fédération Wallonie-Bruxelles was unfortunately blocked because of the pandemic, Texaf's support allowed the other batch of books to reach Bilembo, which installed a reading corner while awaiting the creation of a true library. The goal is to provide both libraries with new publications every year.



Phase 1 of the Texaf Bilembo library in Kinshasa.

LIST OF RMCA PUBLICATIONS 2020*

Exhibition catalogues and guides



Bofane, In Koli, J. (ed.). 2020. Freddy Tsimba. Mabele eleki lola! La terre, plus belle que le paradis. Brussels: Kate Arts Editions in partnership with Africalia & RMCA, 176 p. (Also available in Dutch: Freddy Tsimba.

Mabele eleki lola! De aarde, stralender dan het paradijs.)

Social Sciences and Humanities

Devos, M. & Maniacky, J. (eds). 2020. *Africana linguistica* 26: 200 p. (PR; IF 0,154)

de Saint Moulin, L. 2019. La Place de la religion à



Kinshasa et en RDC. Series 'Cahiers africains' (no. 94). Paris/Tervuren: L'Harmattan/RMCA, 248 p. (PR)

Geenen, S. et al. 2020. Conjonctures de l'Afrique centrale 2020. Series 'Cahiers africains' (no. 95). Paris/Tervuren: L'Harmattan/RMCA/E-CA, 361 p. (PR)

M'Bokolo, E. & Sabakinu Kivilu, J. (eds). 2020.



L'Indépendance du Congo et ses lendemains. Series 'Studies in Social Sciences and Humanities', vol. 179, Tervuren:

RMCA, 350 p. (PR)

Leduc-Grimaldi, M. & Newman, J.L. (eds). 2020.



Finding Dr. Livingstone. A History in Documents from the Henry Morton Stanley Archives. Athens, Ohio/ Tervuren: Ohio University Press/ RMCA, 542 p. (PR)

Omasombo, J. (ed.) et al. 2020. Tshopo.



Laborieuse construction politicoadministrative coloniale muée en bastion du nationalisme congolais. Series: 'Monographies des provinces de la République démocratique du Congo', vol. 14, Tervuren: RMCA, 664 p.

Omasombo, J. 2020. La Décolonisation du Congo belge. La gestion politique des vingt-quatre derniers mois avant l'indépendance Juillet 1958juin 1960. Tervuren: RMCA, 48 p.

* NB. Impact factors are dated June 2020.

Series 'Collections of the RMCA'

Mees, F. 2020. Minerals. Series 'Collections of



the RMCA'. Tervuren: RMCA copublishing Ph. de Moerloose, 141 p. (Also available in Dutch: *Mineralen*, in French: *Minéraux*.)

Various

Jaarverslag/Rapport annuel/Annual Report 2019. PR-Brochure RMCA, 3 versions.

Partnerships with RMCA

Tombu, C. 2020. SOS Planète Congo. Neuchateau : Weyrich.

Van Schuylenbergh, P. 2020. Faune sauvage et



colonisation. Une histoire de destruction et de protection de la nature congolaise (1885-1960). Series 'Outre-Mers', vol. 8. Brussels: Pie Lang, 376 p. (PR)

Zana Etambala, M. 2020. Veroverd. Bezet.



Gekoloniseerd. Congo 1876-1914. Sterck & De Vreese (Amsterdam University Press), 463 p. (PR)

Vanthemsche, G. et al. 2020. Koloniaal Congo.



Een geschiedenis in vragen. Kalmthout: Polis-Pelckmans, 463 p. Also available in French: Le Congo colonial. Une histoire en questions. Renaissance du Livre & RMCA. (PR)

100 X Congo. Een eeuw Congolese kunst in



Antwerpen, Kontich/Tervuren: Bai (MAS Books)/RMCA, 304 p. Also available in French: 100 X Congo. Un siècle d'art congolais à Anvers.

Online publications

Nyame Akuma, vol. 91 published by SAfA in partnership with RMCA, 36 p.

Nyame Akuma, vol. 92 published by SAfA in partnership with RMCA, 36 p.

Nyame Akuma, vol. 93 published by SAfA in partnership with RMCA, 45 p.

Open access

European Journal of Taxonomy (published by a European consortium including the RMCA), vol. 591 to 730 within some papers by RMCA's scientists:

Brecko, J. & Mathys, A. 2020. 'Handbook of best practice and standards for 2D+ and 3D imaging of natural history collections'. *European Journal of Taxonomy* 623: 1-115. https://doi.org/10.5852/ejt.2019.501 (PR; IF 1.393)

Pett, B.L. & **Jocqué**, **R.** 2020. 'Description of two new species of *Xevioso* (Araneae: Phyxelididae) from Southern Africa, with the northernmost localities for the genus'. *European Journal of Taxonomy* 636: 1-18. https://doi.org/10.5852/ejt.2020.636 (PR; IF 1.393)

Dierickx, K. & **Snoeks, J.** 2020. 'Protomelas krampus, a new paedophagous cichlid from Lake Malawi (Teleostei, Cichlidae)'. European Journal of Taxonomy 672: 1-18. https://doi.org/10.5852/ejt.2020.672 (PR; IF 1.393)

Maetens, H., Van Steenberge, M., Snoeks, J. & Decru, E. 2020. 'Revalidation of *Enteromius alberti* and presence of *Enteromius* cf. *mimus* (Cypriniformes: Cyprinidae) in the Lake Edward system, East Africa'. *European Journal of Taxonomy* 700: 1-28. https://doi.org/10.5852/ejt.2020.700 (PR; IF 1.393)

AWARDS

- Two RMCA researchers, geologist Jean-Paul Liégeois and entomologist Marc De Meyer, are in the top 2% of the world's best scientists based on a University of Stanford list of the most cited researchers worldwide.
- Geographer Elise Monsieurs's doctoral research on rainfall as a cause of landslides in tropical Africa won her a prestigious award from the American Geophysical Union, the largest international network of researchers in geosciences.

https://www.africamuseum.be/en/research/discover/news/resist

COMPLETED DOCTORATES

In 2020, the following researchers completed their doctoral studies with the scientific and/or logistic support of the RMCA:

Earth Sciences

Elise Monsieurs

Modelling regional rainfall controls on landslides in the tropics in the context of climate change

ULiège

Advisors: Alain Demoulin (ULiège), Olivier Dewitte (RMCA)

Defended on 11 March 2020

Biology

Armand Richard Nzoko Fiemapong

Diversité biologique des diplopodes du plateau Sud du Cameroun

University of Yaounde I

Advisors: Paul Serge Mbenoun Masse (University of Yaounde I),

Didier Van den Spiegel (RMCA) Defended on 23 June 2020

Bauchet Katemo Manda

The fish fauna of the Upemba National Park (DR Congo): diversity, ecology, conservation and sustainable management KU Leuven

Advisors: Jos Snoeks (KU Leuven/RMCA), Emmanuel Vreven (RMCA), Auguste Chocha Manda (UNILU)

Defended on 10 July 2020

Cultural Anthropology & History

Joane de Lima Santiago

Estudo comparativo do vocabulário dos herbívoros nas línguas bantu

Universiteit Leiden

Advisors: Maarten Mous (Universiteit Leiden), Jacky Maniacky

(RMCA)

Defended on 26 February 2020

NEW PROJECTS

In 2020, the museum was involved in 114 scientific projects, including 11 that began that year:

- Acquisition de connaissance sur les araignées de Mayotte
- AFRISURGE: Transformative Heritage: politics, peacebuilding and digital restitution of cultural heritage in contemporary Northeast DR Congo
- CongoFORCE: Congo Basin forests in a changing environment
- F³- FRUIT FLY FREE: Establishment and maintenance of fruit production areas free and under low prevalence of fruit fly pests in Southern Africa
- GuiDANCE: Geohazards in African Cities: patterns, rates and sustainability in urbansprawling contexts
- HOME: Human remains Origin(s) Multidisciplinary Evaluation
- KEAFish: The biodiversity, biogeography and evolutionary history of the northern basins of the Great African Lakes. The enigmatic fish faunas of Lakes Kivu, Edward and Albert revisited
- LAFHAZAV: Landslide and flood hazards and vulnerability in NW Rwanda: towards applicable land management and disaster risk reduction
- Landaware: The international network on Landslide Early Warning Systems
- MicroResist: The influence of snail host microbiome in trematode parasite resistance
- What is shaping the brain? A comparative study of brain endocasts shape in carnivora

THE SCIENTIFIC INSTITUTE IN FIGURES

Who?

3

departments

75

researchers

more than

15

disciplines

70

partner institutions and universities

What?

In 2020

- 114 ongoing projects including 11 begun in 2020 *
- 74 presentations
 in scientific conferences
- 163 published articles, of which114 peer-reviewed **

Doctoral theses

- 4 doctoral degrees completed in 2020*
- 68 ongoing doctoral programmes in 2020
 - · including 12 begun in 2020
- 61% are African researchers from 12 countries
- 25% of doctoral students are Congolese
- 22% are Belgian

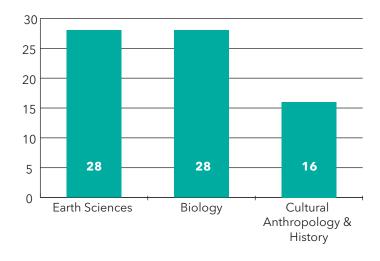
With the support of Umicore

- Supervision of 35 master's students

329 researchers visited the RMCA

to conduct research and/or consult the collections

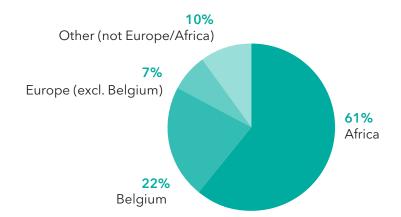
Number of doctoral students by department



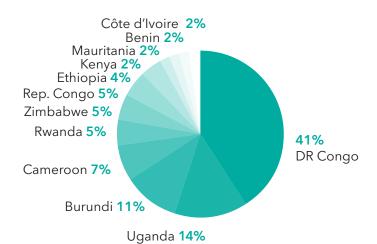
Doctoral students by nationality



Origin of doctoral students



African doctoral students by nationality



Taxonomy

new animal species described

fishes

spiders

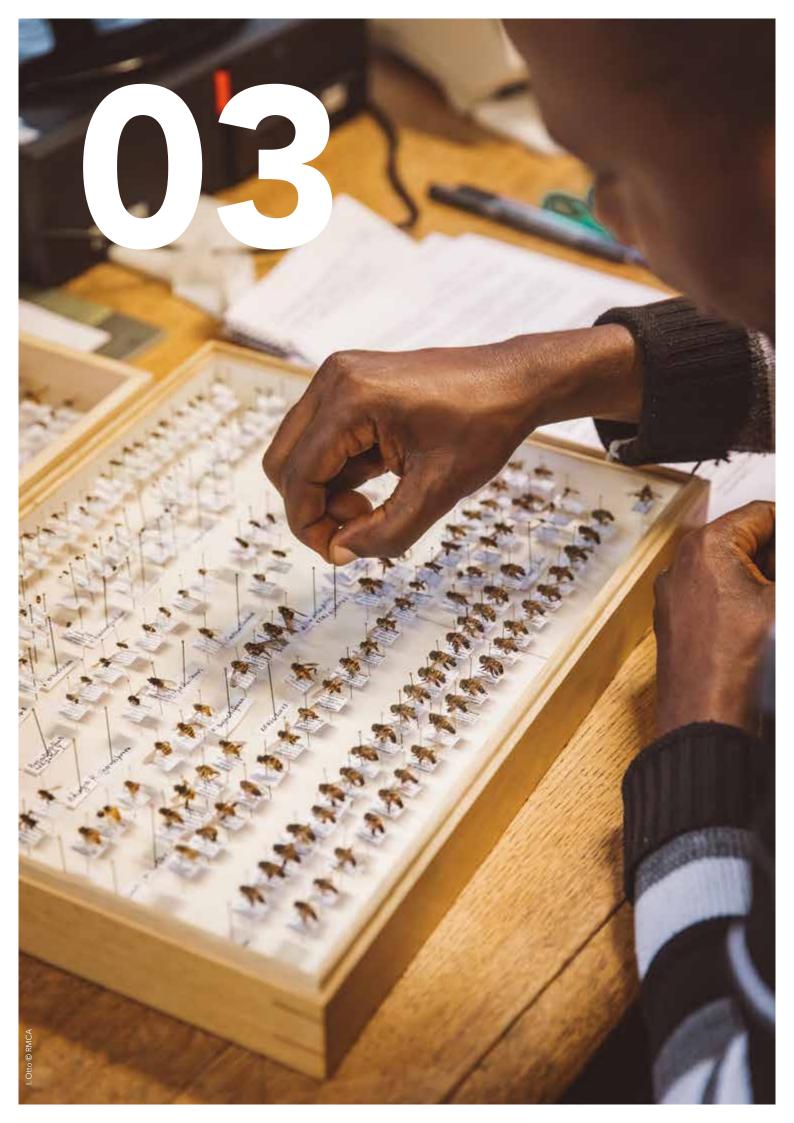
millepedes

hoverflies

(parasitic) flatworms



Cichlidogyrus bulbophallus is one of the parasitic flatworms described for the first time in 2020. In many flatworms, the male reproductive organ is the most important differentiating structure. The name bulbophallus is a combination of the Latin words bulbus (bulb) and phallus (penis) and refers to the swollen bulb-shaped part of the male reproductive organ in this species.



UU

The RMCA's international reputation is based on its vast expertise and its unique collections from the humanities and natural sciences from the Central African region. These collections are both valuable heritage and of great scientific value. They form the basis for the large range of research projects. The fact that less than 1% of the collections can be seen in the new permanent exhibition gives an idea of its vast size.

The museum is responsible for the physical management of these diverse and extensive collections, to conserve them and digitize them. It makes its collections available to the public in various ways. The collection is promoted through research, exhibitions, publications, and databases. Collection pieces are loaned out all over the world for exhibitions or scientific research. In addition, researchers can also consult documents or analyse artefacts and specimens on-site. The collection continues to grow. These days, it expands primarily in the context of research projects in collaboration with African universities and museums.

The museum also has a network of libraries, consisting of a central library and more than ten specialised sub-libraries in various disciplines within the humanities and natural sciences. The complete collection of the museum contains more than 130,000 books and several thousand journals, as well as valuable historical works.

COLLECTION FIGURES

Cultural Anthropology & History

Biology

Earth Sciences

122 000

ethnographic artefacts

75 000

archaeological artefacts

9000

musical instruments

4000

ancient maps

500 000

historical photographs

20 000

historical objects and Western artworks

3 km

historical archives

70

historical films on the Belgian Congo, Rwanda and Burundi (1940-1960) 10 000 000

specimens among which:

6 000 000

insects

1 200 000

fishes

500 000

butterflies

300 000

spiders

195 000

amphibians

150 000

birds

135 000

mammals

80 000

wood samples

62 000

reptiles

17 000

snakes

264 000

aerial photographs

160 000

rock samples

25 000

geological maps

22 000

palaeontological specimens

19 000

minerals

1 km

geological archives

FIGURES FOR THE COLLECTIONS, ARCHIVES AND LIBRARIES

Loans

several dozen

wood samples on research loan

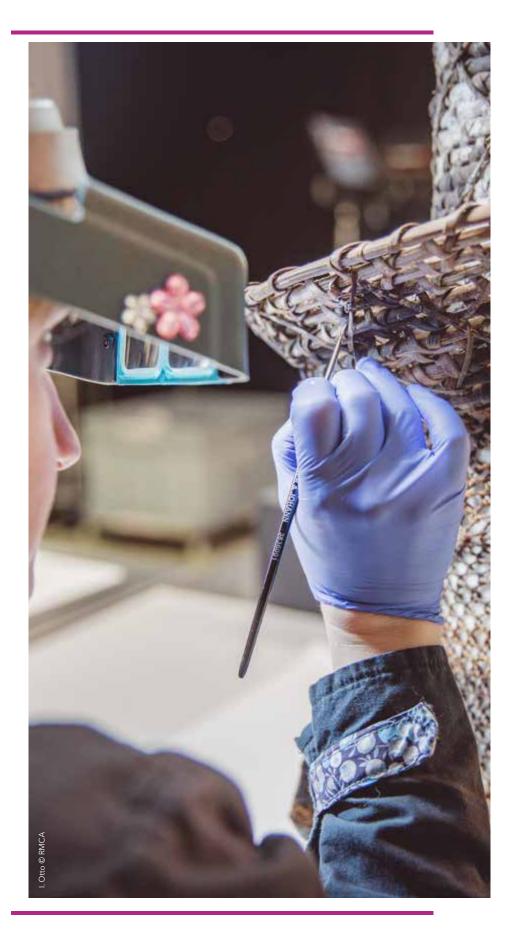
350

ethnographic and historical objects from the reserves consulted for research purposes

more than 340 zoological specimens on research loan

185 objects on loan

for 9
exhibits in
Belgium,
France,
Germany,
Hong Kong and
the United States



Expertise and services

Acquisitions

assessments of ethnographic and archaeological artefacts

> identification of 47 wood samples

geoscience laboratories

identification of 2 Afrotropical hoverflies

wood samples

slides

More than **4082**

zoological specimens

including 1

other invertebrates

and **542** vertebrates

archive fonds, photo albums, historical objects, paintings, etc.

Using computer tomography (CT) to identify the species used for wooden objects

The RMCA hosts a large body of wooden objects: more than 55,000 sculptures, musical instruments, equipment and furniture are manufactured from wood or contain wooden elements. Yet, for only 6% of these objects, the wood species has been identified

A positive identification is important however, for various reasons. First, it is paramount to enable objects to travel abroad for exhibitions, in compliance with the Convention on International Trade and Endangered Species of Wild Fauna and Flora (CITES).

Additionally, it can provide knowledge about the provenance of objects, and insight into the creation processes: which wood species were selected for which types of objects in which cultures, and does this correspond with the natural abundance of these species in those regions?

Knowing the wood species of an object also allows conservators to determine the best treatment course, considering the specific characteristics of the wood species and its ageing properties. Finally, provenancing the objects through the identification of its wood species may assist curators in answering questions from customs officers and other legal instances on confiscated objects.

In order to determine the wood species of an object, customarily a sample is taken and analyzed under the microscope to recognize specific anatomical features. The TOCOWO project (Tomography of Congolese Wooden Objects), funded by BEL-SPO, aims to explore the possibility of computer tomography (CT) as a non-destructive alternative for the systematic identification of wood species. In collaboration with the University of Ghent a detailed 3D rendition of wooden objects can be made, using a micron and submicron CT-scanner. The aim is to create a reference database of positive identifications of Congolese wood species, and to publish a comprehensive protocol for the use of CT to identify the species of wooden objects.



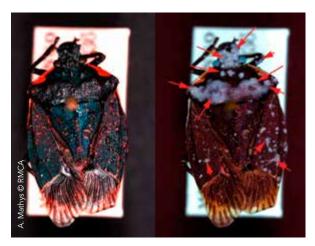
Wooden masks in the depot of the RMCA.

Handbook for the digitization of museum collections in 2D+ and 3D

Digitization experts from the RMCA and the Royal Belgian Institute of Natural Sciences (RBINS) have published a best practice book for the 2D+ and 3D digitization of natural history collections. The successful image capture of the diversity of natural history specimens, which exist in all sizes, colours and types of preservation, requires an approach tailored to each individual object. High-quality digitization is of great importance for several reasons. Thanks to very high resolution photographs, specimens no longer have to leave the optimum environmental conditions of the museum storage facility; consequently, they are not exposed to the dangers of manipulation and transportation. Moreover, good 'digital copies' also provide outstanding opportunities for

By using digital imaging researchers can even gather new information about a specimen that could not be discerned from the original. For example, a 3D model allows for better evaluation of spatial structures and for calculations of surface areas and thicknesses. Another example is multispectral photography in which photographs are taken under different wavelengths of the spectrum, such as UV and infrared light. This also makes it possible to view damage caused by mould or damp, as well as to detect earlier restoration work or the composition of materials and layers of paint in the case of heritage artefacts. The Handbook of Best Practice and Standards for 2D+ and 3D Imaging of Natural History Collections is available online in open access and was published in the European Journal of Taxonomy.

https://www.africamuseum.be/en/research/discover/news/handbook_digitisation



Pentatomidae specimen, Halyomorpha sp. In white light (left) and under UV light (right). The red arrows indicate the areas affected by mould and visible only under UV light.



Detail of a specimen in ethanol (Drosophila sp.) Scale = $500 \mu m$.

Mining archives transferred to Rwanda

In 2018, the RMCA initiated a partnership with the Rwanda Mines, Petroleum and Gas Board (RMB, the national geological service of Rwanda) to transfer data on Rwandan geology and mining contained in the archives of the Earth Sciences Department to that country's national digital archive. To that end, a digitization campaign was launched concerning geo-data largely collected by the Belgian administration and private companies during the colonial period. These 'historic' data are still of very great geological importance today. They include, for example, geological and mineralogical maps and reports for prospecting evaluations. Moreover, with the assistance of Rwandan geologists, gaps in the data were plugged by means of fieldwork, and geological maps were brought up-to-date.

At a ceremony in Kigali on 28 February 2020, the archives were officially handed over to the Rwanda Mines, Petroleum and Gas Board in the presence of the CEO of RMB and the Belgian ambassador: two 14-terabyte hard drives containing all of the digital information ready to be transferred to the Rwandan national data system. This transfer is part of a broader partnership

between the RMCA and the Rwanda Mines, Petroleum and Gas Board to strengthen geological research in Rwanda. For example, training courses for young Rwandan geologists are also being organized. The partnership with RMB has been financed by Enabel (formerly Belgian Technical Cooperation) and was extended for two years.

https://www.africamuseum.be/en/research/discover/news/rwandaminingarchives



Official handing over of two 14 terabyte digitized archives to the Rwanda Mines, Petroleum and Gas Board. The Rwandan Minister without portfolio and RMB CEO Francis Gatare (left), and the Belgian ambassador Benoît Ryelandt (right).

A portal for Belgian natural history collections

DiSSCo (Distributed System of Scientific Collections), an EU-funded research infrastructure for natural science collections, will be converted to a virtual database containing all of Europe's natural history collections, with an estimated 1.5 billion objects in total. The system is scheduled to be operational by 2025.

In anticipation of DiSSCo, Belgium's two natural history institutes (RMCA and RBINS), together with Botanic Garden Meise, pooled their efforts to develop a database for the federal collections. Together, they own one of the largest natural sciences collections in Europe (with over 50 million specimens), describing both past and present biodiversity as well as the geodiversity of our natural environment. This project, NaturalHeritage, was funded by BELSPO and led to the creation of (www.naturalheritage.be), a joint portal that provides access to digitized data on the collections, specimens, and archives found in the Belgian institutions involved in natural history. The project not only creates links between different databases so that information can be presented via a single access point, but also seeks to connect currently unlinked data (such as the relationship between soil/substrate, vegetation, and associated fauna) and improve data cross-validation. Ultimately, NaturalHeritage could serve as the access portal for university collections.



Digital access to archive collections and transfer of Rwandan archives

Three kilometres: this is the length of the historical archives kept at the RMCA, dating from the mid-19th century to the present day. Visitors can consult the museum's archive collection through a single portal, the online platform archives. africamuseum.be, which is constantly updated. More than 15,000 entries were added to the portal in 2020, bringing the total number to some 27,000 records. The system also has the capacity to store high-resolution digital versions of archival documents so that they can be consulted at home. A year after the platform's 2019 launch, user numbers have grown significantly. Of the approximately 9,400 visitors who consulted the portal, 19.5% were from Africa.

Since 2019, the RMCA has also been focusing on the digitization of archives, photos and films on Rwanda. This endeavour is a joint effort with the State Archives of Belgium, the Ministry of Foreign Affairs, and the government of Rwanda, its national archives, and the Rwanda Cultural Heritage Academy. 90% of the RMCA's archival fonds on Rwanda have now been inventoried and a quarter have been digitized. The electronic versions will be transferred to Rwanda.

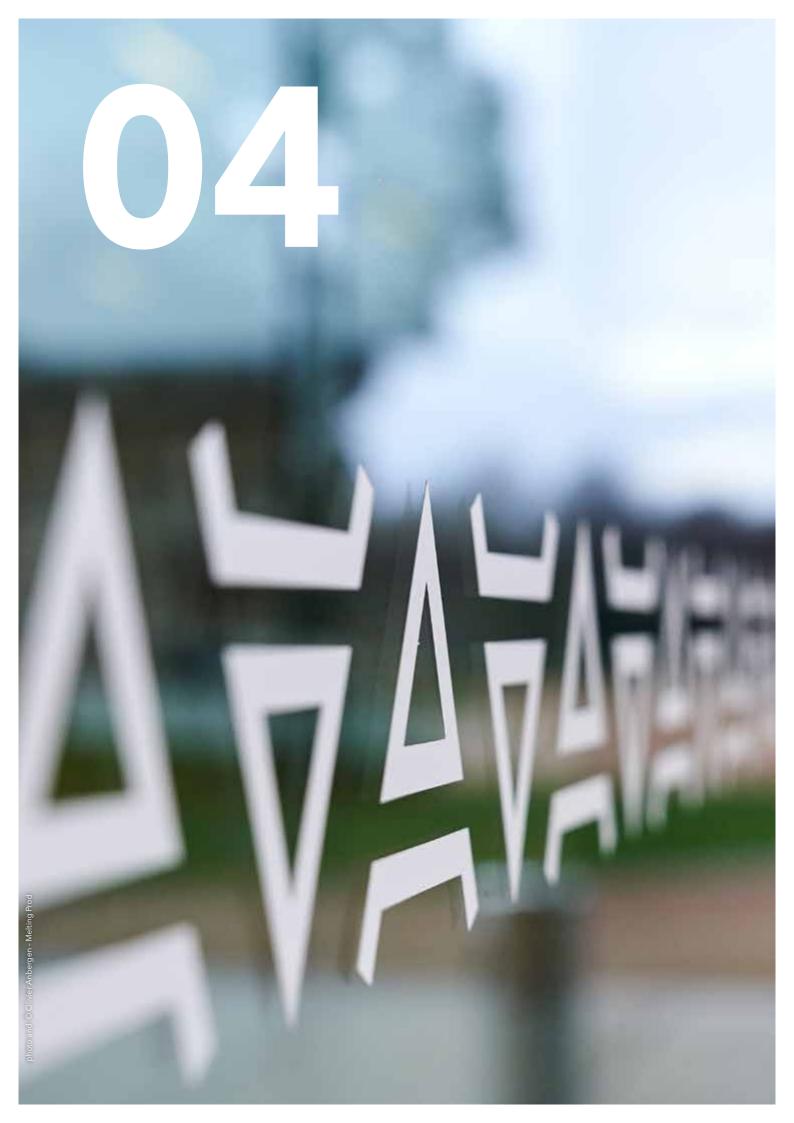
http://archives.africamuseum.be



www.naturalheritage.be provides access to collections, specimens, and archives found in Belgian natural history institutions.



The RMCA holds 3 km of archives.



FINANCIAL REPORT

	2016	2017	2018	2019	2020
Expenditure and revenue (in k€)					
Revenue	15 482	15 070	17 518	19 561	16 605
Expenditure	16 249	15 387	20 009	18 127	16 058
Balance	-767 ⁽¹⁾	-317 ⁽¹⁾	-2491 ⁽¹⁾	1434	546
Sources of revenue					
Human resources envelope	6343	6356	_ (2)	_ (2)	_ (2)
Endowment	3491	3931	10 197	10 197	10 587
Own funds	389	504	952	3382	1237
Projects	4861	4010	5560	4967	4727
Other	398	269	809	1015	52
Total	15 482	15 070	17 518	19 561	16 605
Expenses by source (in k€)					
Personnel	11 599	11 476	11 294	11 985	11.294
Human resources envelope	6343	6356	0	0	0
Personnel own funds	5255	5120	0	0	0
Statutory personnel			5230	5841	5337
Contractual personnel			6063	6144	5957
Operations	3818	3242	4962	5328	3927
Equipment and library	833	670	3753	814	836
Total	16 249	15 387	20 009	18 127	16 058

⁽¹⁾ Deficit and derogation from ESA balance with the approval of the Minister for the Budget

⁽²⁾ Since 01.01.2018, endowment and human resources envelopes have been merged

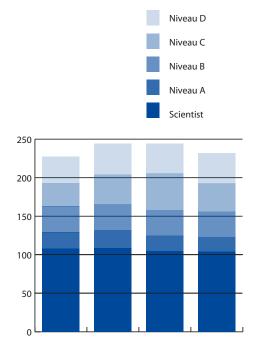
STAFF FIGURES

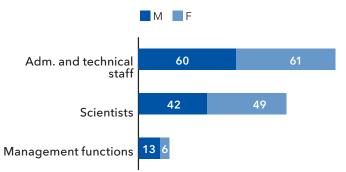
Distribution of statutory and contractual staff by level

	2017	2018	2019	2020
Scientists	108	109	105	104
Statutory	33	36	31	34
Contractual	75	73	74	70
Niveau A	21	23	20	19
Statutory	10	13	12	12
Contractual	11	10	8	7
Niveau B	34	33	33	32
Statutory	24	23	22	23
Contractual	10	10	11	9
Niveau C	30	39	47	36
Statutory	17	18	18	19
Contractual	13	21	29	17
Niveau D	34	40	39	40
Statutory	1	1	1	1
Contractual	40	39	38	39
Total	234	244	246	231

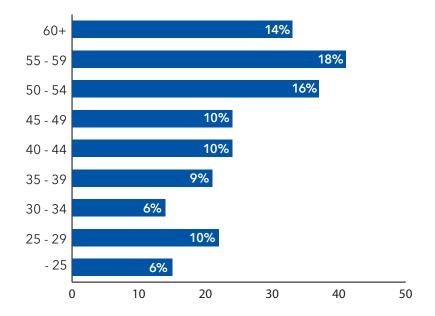
Distribution by level

Distribution according to gender





Age pyramid



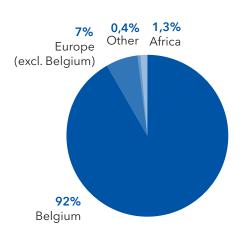
Cultural diversity

Country of birth

5% Africa Other 7% Europe (excl. Belgium) 79% Belgium

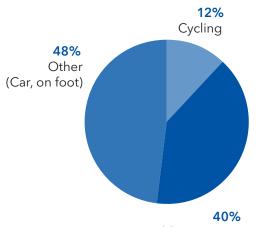
28 countries of birth: 8 countries in Europe, 10 countries in Africa, 10 other countries (Asia, North America, Central America)

Nationality



11 nationalities: 7 European, 3 African and 1 American

Mobility



Public transport

28 staff members cycled a total distance of approx. 19,302 km in 2020

PUBLIC SERVICES

Visitors

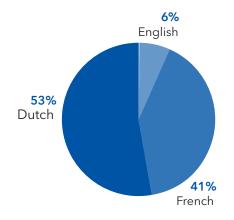
In 2020 the AfricaMuseum welcomed

- 105,014 visits
- by 97,791 unique visitors

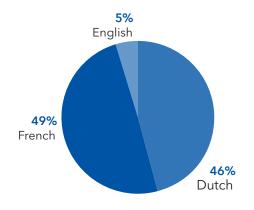
7,595 people visited the exhibition Mabele Eleki Lola! The earth, brighter than paradise

There were 773 guided tours and 87 workshops.

Guided Tours: breakdown by language



Workshops: breakdown by language



RMCA and the press

Total number of articles published: 1,643

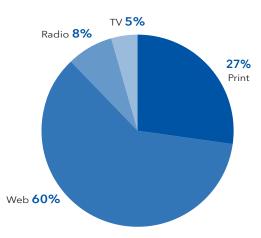
- Belgian press: 1,544 (an increase of 37% compared with 2019)
- international press: 99 (an increase of 98% compared with 2019)

Belgian press

Breakdown of articles according to language

French 42% Salar 0.8% Contact of the contact of t

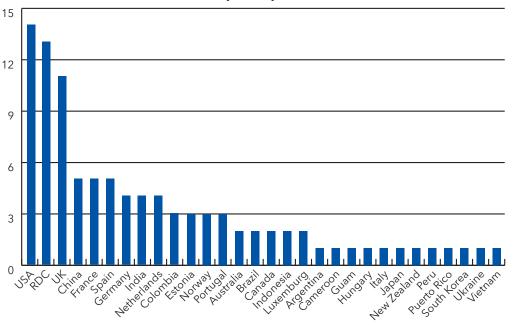
Breakdown of articles according to medium



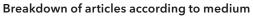
Foreign press

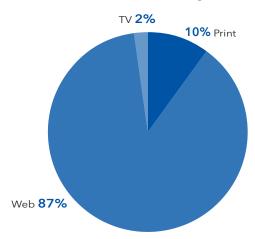
In 2020 the museum attracted a great deal of international press coverage (in as many as 26 countries), in part in response to an article in the renowned scientific journal *Nature* about declining carbon-sink capacity in tropical forests (see p. 22).



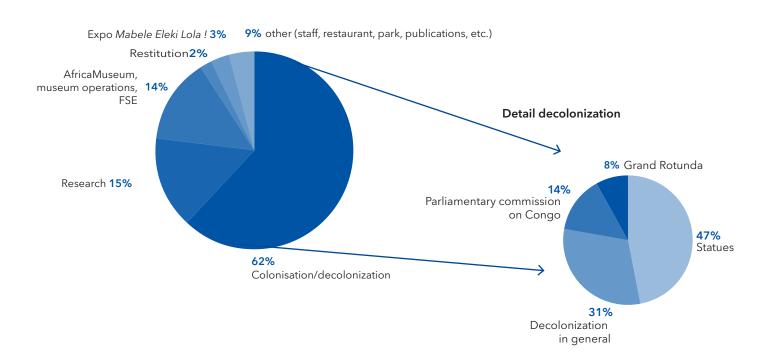


Foreign press





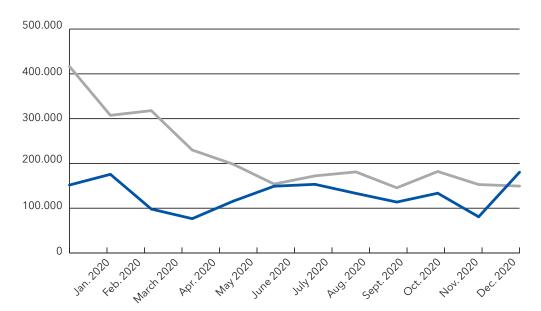
Overview of topics covered



Website

In 2020 the museum's webpages were visited a total of 1,561,925 times. This represents a general decline of 40% compared with 2019.

- However, the contrast with 2019 chiefly concerns the first five months of 2020. In that same period in 2019, and following its recent reopening in December 2018, the museum was still benefiting from an exceptional amount of interest, which stabilized after June. Furthermore, the closure of the museum in March 2020 as a result of COVID-19 caused a considerable fall in website visits. Nevertheless, by the time of reopening at the end of May the figures were at the same level as they were in 2019.
- From June onwards, the number of visits was only 12% lower than in 2019, excluding the second closure in November. In view of the extraordinary nature of the year this was still a remarkably good performance. Following the reopening in December 2020 there were even 20% more website visits than in the previous year.



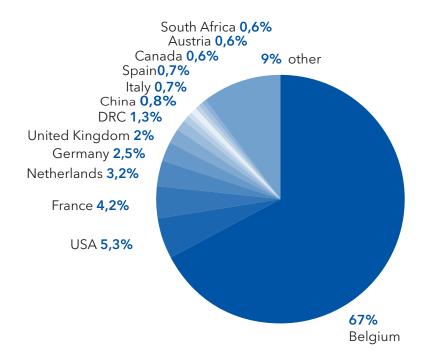
Website consultations

- 251,342 unique visitors (based on IP address) consulted the website a total of 383,403 times, which averages at 1.5 consultations per visitor.
- On average, a site visit lasted for 3 minutes and 25 seconds.
- The average number of pages viewed per visit was 1.07 pages, a slight decline compared with 2019 but still a good showing; the general average for websites is at around 3.0 pages per session.
- 52.7% of visitors used a desktop computer to access the website, while 47.3% accessed it using a mobile device (smartphone or tablet). Despite a slight decline in mobile device visits, this statistical breakdown remains in line with 2019.
- 79.8% of visitors arrived at the website either directly or via a search engine, which is in line with previous years. 8.8% of visitors accessed africamuseum.be via advertising, while 5% accessed the website via social media.

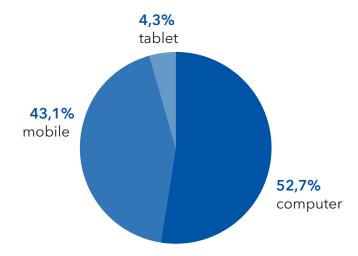
Origin of website visitors

- 67.5% of visitors viewed the website from Belgium. This is a slight decline compared with 2019 (73%). After the USA (5.3%), the most website visits were made from neighbouring countries: France (4.2%), the Netherlands (3.2%) and Germany (2.5%).
- 5.1% of all visitors came from Africa, which is an increase on the 3.8% recorded in 2019, even if this percentage remains low. However, at 1.3%, the DRC did rank seventh among the countries that generated the most website visits.

Origin of website visitors



Device type



Social media

2020 saw an increase in the number of followers on our social media accounts.

- The Facebook page AfricaMuseum EN went from 9,603 to10,233 followers, a 7% increase.
- The Facebook page AfricaMuseum België went from 2,188 to 2,286 followers, a 4% increase.
- The Facebook AfricaMuseum Belgique went from 1,950 to 2,193 followers, a 12% increase.
- The Instagram account had 4,149 followers including 643 new ones by the end of 2020, an 18% increase.
- The Twitter account had 6,084 followers including 567 new ones by the end of 2020, a 10% increase.

The most popular posts reached:

- 32,000 persons on the AfricaMuseum EN Facebook page;
- 3,400 persons on the AfricaMuseum België page;
- 78,400 persons on the AfricaMuseum Belgique page;
- 6200 views on Twitter.

Top posts



Facebook post: 'On June 3rd, the AfricaMuseum announced its support for the #BlackLivesMatter movement at the museum entrance and on social media. In fact, the museum was established in 1898 as a scientific institution for the dissemination of colonial propaganda and support of colonial activities in Belgium. The museum has long conveyed a message of Western supremacy, deeply rooted in racism. We acknowledge this and we see the fight against racism (...)'

Our statement on #BlackLivesMatter sparked off numerous reactions, contributing to the societal debate on the role of colonial history in the racism that is still present in Belgium today. The statement can be read on the museum's website:

https://www.africamuseum.be/en/about_us/viewpoints

With 78,400 people reached, this post regarding an informative article on the Kongo Kingdom for the general public was the most popular publication of 2020.

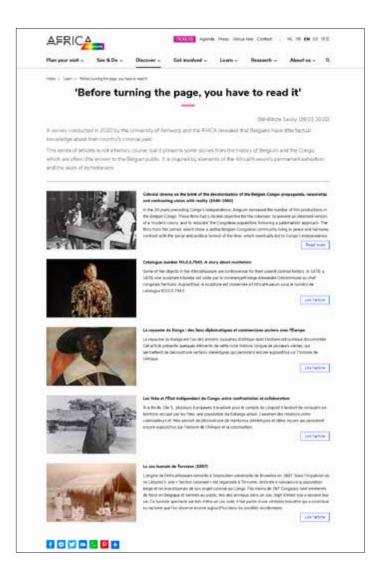
The article is part of the series 'Before turning the page, you have to read it' (by Bénédicte Savoy) on the RMCA website. A survey conducted in 2020 by the University of Antwerp and the RMCA revealed that Belgians have little factual knowledge about their country's colonial past.

The series of articles is not a history course, but presents little-known stories from the history of Belgium and Congo. It is inspired by parts of the AfricaMuseum's permanent exhibition and by the work of its historians.

https://www.africamuseum.be/en/discover/history_articles/kongo-kingdom



Facebook post: 'Did you know there were African ambassadors in Europe in the 17th century? Dom Miguel de Castro, for example, was ambassador of the Kongo kingdom in the Netherlands in the 1640s. The Kongo kingdom is one of Africa's ancient kingdoms whose history is exceptionally well documented. This article highlights some pieces of this rich, centuries-old history, and deconstructs some of the stereotypes that still persist today about the history of Africa. Read the article: https://www.africamuse-um.be/.../history.../kongo-kingdom'





] フロ **m**

Mission statement

The museum must act as a world centre for research and knowledge dissemination on the past and present societies and the natural environments of Africa, in particular of Central Africa, to foster - among the general public and the scientific community - a better understanding of and interest in this field and, through partnerships, to make a substantial contribution towards the sustainable development of Africa. Thus the core tasks of this Africa-oriented institution consist of acquiring and managing collections, conducting scientific research, implementing the results of this research, disseminating knowledge, and presenting to the public a selection from its collections.

Governance and advisory bodies

The RMCA is a federal scientific institution under the aegis of the State Secretary for Science Policy. Administratively speaking, the RMCA is an independently-managed public institution with three governance bodies and one advisory body.

Management Committee

The management committee is responsible for the financial, material and administrative management of the RMCA, and serves the same function for the Royal Belgian Institute of Natural Sciences. Chaired by a representative of the Belgian Federal Science Policy Office, it is made up of four external members (university academics and management experts), the managing directors of each institution, and two representatives of the Belgian Federal Science Policy Office.

Members with a deliberative vote:

- · Frank Monteny, Chair, Director General PPS Science Policy
- Guido Gryseels, Deputy Chair, Director General, RMCA
- Patricia Supply, Deputy Chair, Director General ad interim, RBINS
- · Ingrid Vanden Berghe, External member
- · Olivier Ninane, Advisor PPS Sciences Policy
- · François Mairesse, External member
- · Koen Verhoest, External member
- · Claude Bragard, External member



Members of the Director's advisory committee during an online meeting.

Members with advisory rights:

- · Marie-Solange Mukarwema, Accountant, RRINS
- · Yves Geens, Accountant, RMCA
- Brigitte Lauwaert, Head, Mathematical Models
 Management Unit, RBINS
- · Didier Van den Spiegel, Head of service, RMCA
- Françoise Stassart, Vice-secretary
 Attaché PPS Science Policy
- Jacques Lust, Secretary, Attaché PPS Science Policy
- · Johan Schrobiltgen, Inspector of finance
- · Pierre De Maret, Chair, Scientific Council, RMCΔ
- · Bruno Danis, Chair, Scientific Council, RBINS

Non-voting experts:

- Patricia Supply, Director of Support Services, RBINS
- · Tom Aarts, jurist, RBINS
- · Laurent Flamend, Advisor, Belgian Federal Science Policy Office
- · Olivier Ninane, Advisor, Belgian Federal Science Policy Office
- F. Stassart, Attaché, Budget and Management Control, Belgian Federal Science Policy Office
- · A. Verbeeren, HR officer, RBINS

Director's advisory committee

Members with voting rights:

- · Guido Gryseels, Director General RMCA, Chairman
- · Luc André, Head of Department a.i. Earth Sciences
- · Els Cornelissen, Head of Department a.i. Cultural Anthropology and History
- · Marc De Meyer, Head of Department a.i. Biology
- · Isabelle Gérard, Head of Publications Service
- Jacky Maniacky, Head of Culture and Society Service
- · Didier Van den Spiegel, Head of Biological Data and Collection Management Service
- Bruno Verbergt, Operational Director for Public Services

Scientific Council

The Council provides opinions on the quality and relevance of the institution's scientific activities. Half of its members are external experts from Belgian universities and the other half are from the museum's executive scientific staff. The members of the Scientific Council are appointed to a four-year term by the Secretary of State of Belgian Federal Science Policy.

Internal members:

- · Guido Gryseels, Director General
- · Luc André, Head of Department a.i. Earth Sciences
- Els Cornelissen, Head of Department a.i.
 Cultural Anthropology and History
- Marc De Meyer, Head of Department a.i. Biology
- Jacky Maniacky, Head of Culture and Society Service
- Patricia Van Schuylenbergh, Head of History and Politics Service

External members:

- · Pierre De Maret, Professor, ULB, Chairman
- · Frans Ollevier, Professor, KU Leuven
- · Éric Pirard, Professor, ULiège
- · Noël Vandenberghe, Professor, KU Leuven
- · Koen Vlassenroot, Professor, Ugent

Recruitment and promotion board

The committee is responsible for the selection and promotion of statutory scientific staff. It is chaired by a Federal Science Policy representative and is made up of two external experts from universities and the RMCA's Director-General.

Members:

- · Robert Van De Walle, President, BELSPO
- · Guido Gryseels, General Director, RMCA
- · Sara Geenen, Professor, UAntwerpen
- · Caroline Nieberding, Professor, UCLouvain

Basic Consultative Committee

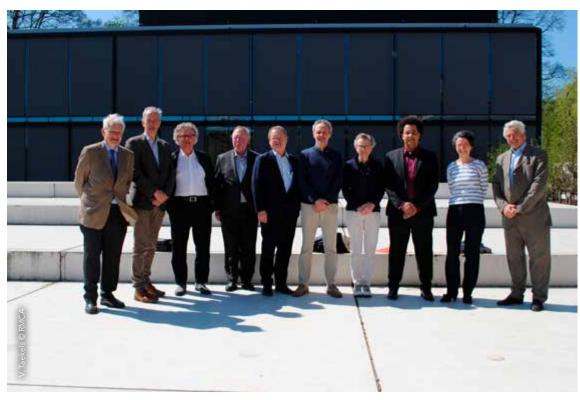
The Basic Consultative Committee is an advisory body that monitors working conditions and well-being in the workplace. Its members are representatives of personnel and labour unions.

Management delegation:

- · Guido Gryseels, General Director, Chairman
- · Bruno Verbergt, Operational Director for Public Services
- · Els Cornelissen, Head of Department a.i. History and Cultural Anthropology
- · Marc De Meyer, Head of Department a.i. Biology
- · An Spegelaere, Head of Service
- · Isabelle Gérard, Head of Service
- · François Kervyn de Meerendré, Head of Service
- · Kristien Opstaele, Head of Service
- · Dirk Verbist, Head of Service
- · Mario Thoilants, Prevention advisor

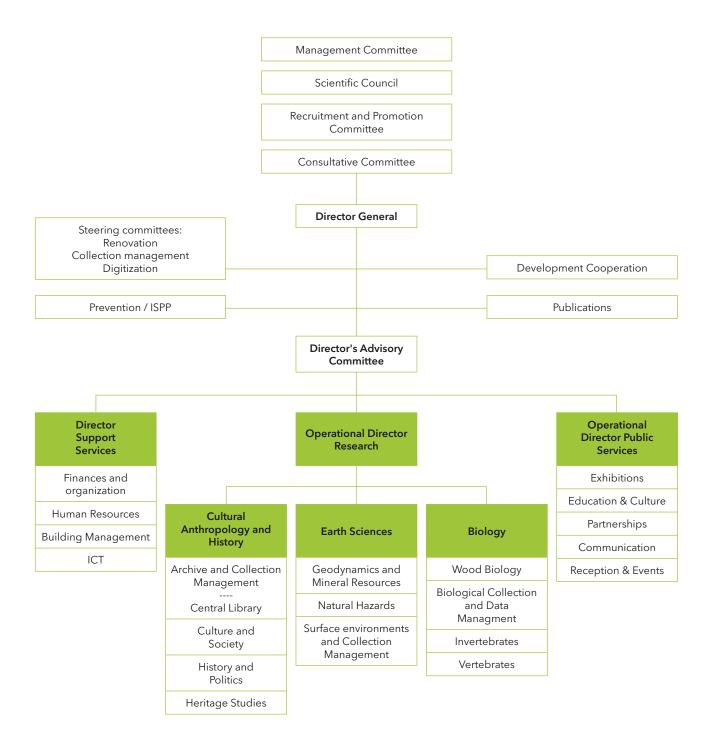
Union representatives:

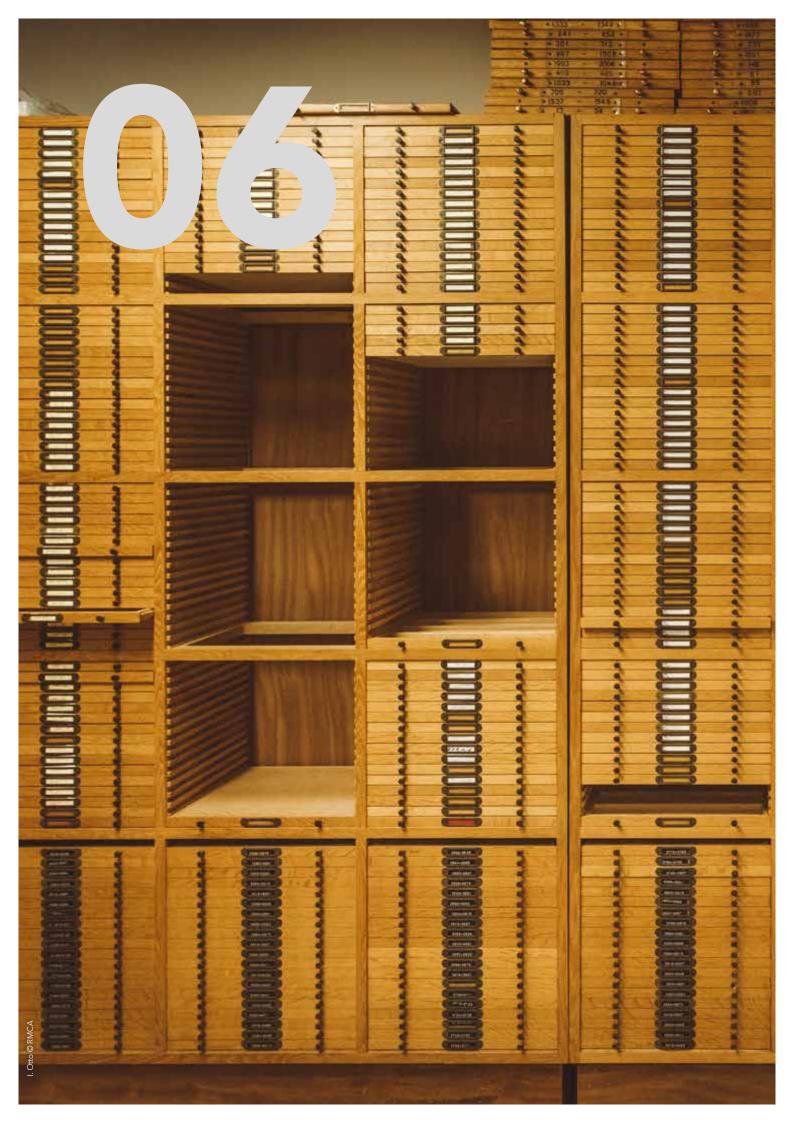
- · Valérie Demeulemeester (ACOD/CGSP)
- · Patricia Van Schuylenbergh (ACV/CSC)
- · Geert Dewulf (ACV/CSC)
- · Jean-Christophe Vancoppenolle (ACV/CSC)
- · Martine Renaux (VSOA-Gr II/SLFP-Gr II)
- · Dr. Mieke Cogge, occupational physician



Members of RMCA Scientific Council (Patricia Van Schuylenbergh and Koen Vlassenroot were absent).

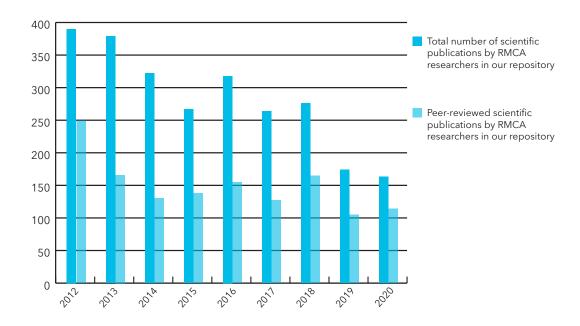
Organization Chart





PUBLICATIONS OF RMCA SCIENTISTS

Every year, the researchers of the museum publish articles in scientific journals or books, monographs, etc. with international, highly-regarded publishers. In 2020, they published 163 texts, of which 114 were peer-reviewed.

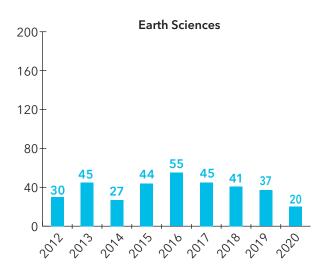


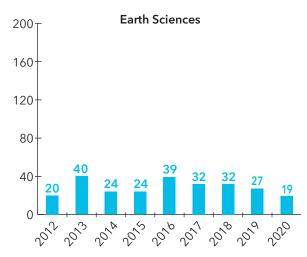
Statistics per discipline and per type in 2020

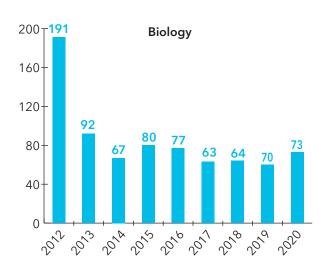
	Earth Sciences	Biology	Cultural Anthropology and History	TOTAL	
Total number of peer-reviewed scientific publications	20	73	14	107	> detail 1
Articles in scientific journals	19	65	2	86	> detail 2
Chapters in (edited) book	0	8	8	16	
Books and catalogues (as author or editor)	1	0	4	5	•
Total number of non-peer-reviewed publications	7	20	15	42	
Journal articles	3	2	6	11	_
Maps	1	0	0	1	
(edited) books/catalogues	0	1	2	3	•
Chapters in (edited) book	0	1	2	3	
Chapters in (edited) catalogue	0	0	0	0	
TOTAL	27	93	29	-	-

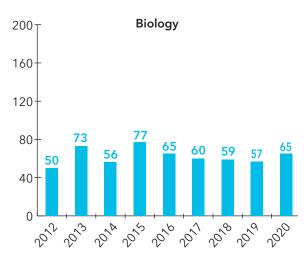
Detail 1: evolution in the number of peer-reviewed scientific publications

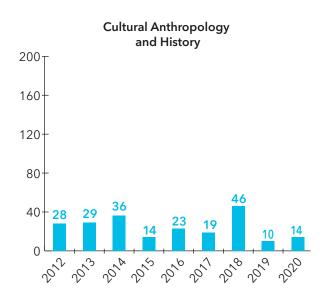
Detail 2: evolution in the number of articles in scientific journals

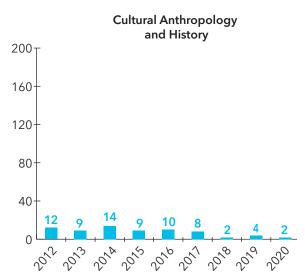












REFERENCES

The following lists represent a selection of the main publications by RMCA researchers in 2020. All references can be consulted on our website.

https://www.africamuseum.be/en/research/discover/publications/repository

Cultural Anthropology and History

Peer-reviewed publications

Baeke, V. & Bundjoko, H. 2020. 'L'exposition permanente de l'IMNC. Métamorphoses de l'approche muséale des arts congolais à Kinshasa' In: M'Bokolo, E. & Sabakinu Kivulu, J. (eds), *L'Indépendance du Congo et ses lendemains*. Series 'Studies in Social Sciences and Humanities', vol. 179. Tervuren: RMCA, pp. 83-127. ISBN: 978-9-4926-6971-1. (PR)

Cornelissen, E. & Muya, D. 2020. 'Quelques projets à court terme au Musée national de Lubumbashi: pour un avenir à long terme?'. In: M'Bokolo, E. & Sabakinu Kivulu, J. (eds), *L'Indépendance du Congo et ses lendemains*. Series 'Studies in Social Sciences and Humanities', vol. 179. Tervuren: RMCA, pp. 67-82. ISBN: 978-9-4926-6971-1. (PR)

Devos, M., Maniacky, J. (eds.). 2020. Africana Linguistica 26: 194 (PR; IF 0,154).

Leduc-Grimaldi, M. & Newman, J.L. (eds). 2020. *Finding Dr. Livingstone. A History in Documents from the Henry Morton Stanley Archives*. Athens, Ohio/Tervuren: Ohio University Press/RMCA, 542 p. (PR)

Lipson, M., Ribot, I., Mallick, S., Rohland, N., Olalde, I., Adamski, N., Broomandkhosbachte, N., Lawson, A.M., Lopez, S., Oppenheimer, J., Stewardson, K., Neba'Ane Asombang, R., Bocherens, H., Bradman, N., Culleton, B.J., **Cornelissen, E.**, Crevecoeur, I., De Maret, P., Fomine, F.L.M., Lavachery, P., Mbida Mbindzie, C., Orban, R., Sawchuk, E., Semal, P., Thomas, M.G., Van Neer, W., Veeramah, K.R., Kennett, D., Patterson, N., Hellenthal, G., Lalueza-Fox, C., Maceachern, S., Prendergast, M.E. & Reich, D. 2020. 'Ancient West African foragers in the context of African population history'. *Nature* 577: 665-670. DOI: https://doi.org/10.1038/s41586-020-1929-1 (PR)

Dibwe dia Mwembu, D & **Omasombo Tshoda**, **J.** 2020. '"Derrière les lunettes de Lumumba". Usages et pillages de l'image du héros congolais depuis l'indépendance en RDC'. In: M'Bokolo, E. & Sabakinu Kivulu, J. (eds), *L'Indépendance du Congo et ses lendemains*. Series 'Studies in Social Sciences and Humanities', vol. 179. Tervuren: RMCA, pp. 293-317. ISBN: 978-9-4926-6971-1. (PR)

Omasombo Tshonda, J. & Vanthemsche, G. 2020. '1960: la fin de la colonisation du Congo?' In: *Le Congo colonial. Une histoire en question*. Brussels/Tervuren: Renaissance du Livre/RMCA, pp. 81-93 (PR). Also available in Dutch: '1960: Het einde van de kolonisatie van Congo?'. In: *Koloniaal Congo. Een geschiedenis in vragen*. Kalmthout: Polis-Pelckmans, in partnership with RMCA, pp. 75-88.(PR)

Van Schuylenbergh, P. 2020. "My search in the Great Darkness": Attilio Gatti ou les grandes ambitions d'un professionnel de l'Aventure'. In: Comberiati, D., Halen, P., Iounes-Vona, R. (dir.) (ed.), Des Italiens au Congo, aux Italiens du Congo. Aspects d'une globalité. Series 'Mémoires Lieux de Savoir'. Paris: L'Harmattan, pp. 101-118. ISBN: 978-2-343-19072-3. (PR)

Van Schuylenbergh, P. 2020. 'In het spoor van de Congolese okapi'. *Wonderkamer. Magazine voor wetenschapgeschiedenis* 1, special issue: *Wetenschap en de koloniën*: 72-74. ISSN: 978-90-9033269-7. (PR)

Van Schuylenbergh, P. 2020. Faune sauvage et colonisation. Une histoire de destruction et de protection de la nature congolaise (1885-1960). Series 'Outre-Mers'. Pie Lang, vol. 8, 376 p. (PR)

Zana Etambala, M. 2020. 'De Congolese gemeenschap in België: een ongewild "neveneffect" van de koloniale overheersing? In: *Koloniaal Congo. Een geschiedenis in vragen*. Kalmthout: Polis-Pelckmans, in partnership with RMCA, pp. 197-206. Also available in French: 'La communauté congolaise en Belgique: un "effet secondaire" involontaire de la domination congolaise? In: *Le Congo colonial. Une histoire en question*. Brussels/Tervuren: Renaissance du Livre/RMCA, pp. 209-219. (PR).

Zana Etambala, M. 2020. 'Tributes to Patrice Lumumba in the Poetry of the American Continent, 1961-1966'. In: De Groof, M. (ed.), *Lumumba in the Arts*. Leuven: Leuven University Press, pp. 245-268. ISBN: 978-4627-0174-8 (PR)

Zana Etambala, M. 2020. 'P. Lumumba assassiné et l'indépendance congolaise profanée, 1961-1966. Hommage et complaintes politico-poétiques africains'. In: M'Bokolo, E. & Sabakinu Kivulu, J. (eds), *L'Indépendance du Congo et ses lendemains*. Series 'Studies in Social Sciences and Humanities', vol. 179. Tervuren: RMCA, pp. 173-227. ISBN: 978-9-4926-6971-1. (PR)

Zana Etambala, M. 2020. *Veroverd. Bezet. Gekoloniseerd. Congo 1876-1914*. Sterck & De Vreese (Amsterdam University Press), 463 p. (PR)

Non-peer-reviewed publications

Bocquet, E., **Maniacky, J.**, Vermeulen, C. & Malaisse, F. 2020. 'À propos de quelques chenilles consommées par les Mongo en Province de l'Équateur (République démocratique du Congo)'. *Geo-Eco-Trop* 44 (1): 109-130. URL: http://www.geoecotrop.be/uploads/publications/pub_441_06.pdf

Bodenstein, W. 2020. 'The AfricaMuseum's largest maps of the Congo'. *Maps in History* 66: 16-27. ISSN: 1379-3306.

Cornelissen, E. 2020. 'Philip Allsworth-Jones. 2019. Middle Stone Age (MSA) of Nigeria in its West African context'. *Antiquity* 94 (375): 808-810. DOI: https://doi.org/10.15184/aqy.2020.66

De Paepe, A. 2020. 'Embrittlement of Black Resin: Discoveries during the Challenging Conservation Treatment of a Chokwe Mukanda Mask'. *Objects from Indigenous and World Cultures: Conservation Newsletter* 5: 12-21. ICOM-CC International council of museums - Committee for Conservation. ISSN: 2517-9683.

Omasombo, J. (ed.) et al. 2020. *Tshopo. Laborieuse construction politico-administrative coloniale muée en bastion du nationalisme congolais*. Series: 'Monographies des provinces de la République démocratique du Congo', vol. 14, Tervuren: RMCA, 664 p.

Omasombo, J. 2020. La Décolonisation du congo belge. La gestion politique des vingt-quatre derniers mois avant l'indépendance Juillet 1958-juin 1960. Tervuren: RMCA, 48 p.

Genbrugge, S. & van Es, M. 2020. 'Opgepast: Renovatie. Het verhaal van het AfricaMuseum!' *Museumpeil* 56: 23-25. ISSN: 1381-1088.

Volper, J. 2020. 'Pourquoi les musées sont importants ?'. In: Felix, M. et al., Racines. Manuel d'Histoire de l'Art congolais, vol.1-1: 16-29. Brussels: Tribal Arts SPRL.

Volper, J. 2020. 'Brève introduction à l'archéologie congolaise'. In: Felix, M. et al., Racines: Manuel d'Histoire de l'Art congolais, vol.1-2: 182-209. Brussels: Tribal Arts SPRL

Others

/

Biology

Peer-reviewed publications

Aguirre-Gutiérrez, J., Malhi, Y., Lewis, S.L., Fauset, S., Adu-Bredu, S., Affum-Baffoe, K., Baker, T.R., Gvozdevaite, A., **Hubau, W.**, Moore, S., Peprah, T., Zieminska, K., Phillips, O.L. & Oliveras, I. 2020. 'Long-term droughts may drive drier tropical forests towards increased functional, taxonomic and phylogenetic homogeneity'. *Nature Communications* 11: 3346. DOI: https://doi.org/10.1038/s41467-020-16973-4 (PR; IF 11.800)

Angoboy Ilondea, B., De Mil, T., Hubau, W., Van Acker, J., Van den Bulcke, J., Fayolle, A., Bourland, N., Kapalay, O., Chantrain, A., Ewango, C. & Beeckman, H. 2020. 'Towards improving the assessment of rainforest carbon: complementary evidence from repeated diameter measurements and dated wood'. *Dendrochronologia* 62: 10. DOI: https://doi.org/10.1016/j.dendro.2020.125723 (PR; IF 2.107)

Ashepet, M., Jacobs, L., Van Oudheusden, M. & **Huyse, T.** 2020. 'Wicked Solution for Wicked Problems: Citizen Science for Vector-Borne Disease Control in Africa'. *Trends in Parasitology* 37: 93-96. DOI: https://doi.org/10.1016/j.pt.2020.10.004 (PR; IF 6.9)

Bauters, M., Meeus, S., Barthel, M., Stoffelen, P., De Deurwaerder, H.P.T, Meunier, F., Drake, T.W., Ponette, Q., Ebuy, J., Vermeir, P., **Beeckman, H.**, Wyffels, F., Bode, S., Verbeeck, H. & Vandelook, F. 2020. 'Century-long apparent decrease in intrinsic water-use efficiency with no evidence of progressive nutrient limitation in African tropical forests'. *Global Change Biology* 26: 4449-4461. DOI: https://doi.org/10.1111/gcb.15145 (PR; IF 3.014)

Beeckman, H., Blanc-Jolivet, C., Boeschoten, L., Braga, J.W.B, Cabezas, J.A., Chaix, G., Crameri, S., Degen, B., Deklerck, V., Dormontt, E., Espinoza, E., Gasson, P., Haag, V., Helmling, S., Horacek, M., Koch, G., Lancaster, C., Lens, F., Lowe, A., Martinez-Jarquin, S., Nowakowska, J.A., Olbrich, A., Paredes-Villanueva, K., Pastore, T.C.M, Ramananantoandro, T., Razafimahatratra, A.R., Ravindran, P., Rees, G., Soares, L.F., Tysklind, N., Vlam, M., Watkinson, C., Wheeler, E., Winkler, R., Wiedenhoeft, A.C., Zemke, V.T. & Zuidema, P. 2020. 'Overview of current practices in data analysis for wood identification. A guide for the different timber tracking methods'. In: Schmitz, N. (ed.), *Global Timber Tracking Network*. European Forest Institute and Thünen Institute, p. 143. DOI: https://doi.org/10.13140/RG.2.2.21518.79689 (PR)

Bhagwandin, A., Debipersadh, U., Kaswera-Kyamakya, C., **Gilissen, E.**, Rockland, K.S., Molnar, Z. & Manger, P.R. 2020. 'Distribution, number, and certain neurochemical identities of infracortical white matter neurons in the brains of three megachiropteran bat species'. *Journal of Comparative Neurology* 528: 3023-3038. DOI: https://doi.org/10.1002/cne.24894 (PR; IF 2.801)

Bogaert, J., **Beeckman, H.**, De Cannière, C., Defourny, P. & Ponette, Q. (eds) 2020. *Les Forêts de la Tshopo: écologie, histoire et composition*. Gembloux: Presses universitaires de Liège - Agronomie, 350 p. ISBN: 978-2-87016-157-9. (PR)

Bota, L., Fabião, B., **De Meyer, M.**, Manuel, L., Mwatawala, M., **Virgilio, M.**, Canhanga, L. & Cugala, D. 2020. 'Fine-scale infestation pattern of *Bactrocera dorsalis* (Diptera: Tephritidae) in a mango orchard in Central Mozambique'. *International Journal of Tropical Insect Science* 40 (2): 943-950. DOI: https://doi.org/10.1007/s42690-020-00152-5 (PR; IF 0.536)

Braganca, P., Smith, T., **Vreven, E.** & Chakona, A. 2020. 'Integrative taxonomy reveals hidden diversity in the southern African darters genus *Nannocharax* Günther 1867 (Characiformes: Distichodontidae)'. *Journal of Fish Biology* 97 (6): 1713-1723. DOI: https://doi.org/10.1111/jfb.14535 (PR; IF 1.497)

Canhanga, L., **De Meyer, M.**, Cugala, D., **Virgilio, M.** & Mwatawala, M. 2020. 'Economic injury level of the Oriental fruit fly, *Bactrocera dorsalis* (Diptera: Tephritidae), on commercial mango farms in Manica Province, Mozambique'. *African Entomology* 28 (2): 278-279. ISSN: 1021-3589. DOI: https://doi.org/10.4001/003.028.0278 (PR; IF 0.59)

Chawana, R., Patzke, N., Bhagwandin, A., Kaswera-Kyamakya, C., **Gilissen, E.**, Bertelsen, M.F., Hemingway, J. & Manger, P.R. 2020. 'Adult hippocampal neurogenesis in Egyptian fruit bats from three different environments: Are interpretational variations due to the environment or methodology?' *Journal of Comparative Neurology* 528 (17): 2994-3007. DOI: https://doi.org/10.1002/cne.24895 (PR; IF 2.801)

Chowdhury, M.Q., Bhattarai, T.R., **De Ridder, M.** & **Beeckman, H.** 2020. 'Growth-ring analysis of *Diploknema butyracea* is a potential tool for revealing indigenous land use history in the lower Himalayan Foothills of Nepal'. *Forests* 11 (2): 242. DOI: https://doi.org/10.3390/f11020242 (PR; IF 2.221)

Cnops, L., **Huyse, T.**, Maniewski, U., Soentjens, P., Bottieau, E., Van Esbroeck, M. & Clerinx, J. 2020. 'Acute Schistosomiasis with a *S. mattheei* x *S. haematobium* Hybrid Species in a Cluster of 34 Travelers Infected in South Africa'. *Clinical Infectious Diseases*. ISSN: 1058-4838. DOI: https://doi.org/10.1093/cid/ciaa312 (PR; IF 7.7)

De Cauwer, V., **Beeckman, H.**, Kleinn, C., Moses, M., Nott, A., Seifert, T. & Muys, B. 2020. 'Improving the knowledge base for tropical dry forest management in southern Africa: regional volume models for *Pterocarpus angolensis'*. Forest Ecology and Management 477: 118485. DOI: https://doi.org/10.1016/j.foreco.2020.118485 (PR; IF 3.126)

De Cock, M., Virgilio, M., Vandamme, P., Bourtzis, K., De Meyer, M. & Willems, A. 2020. 'Comparative microbiomics of tephritid frugivorous pests (Diptera: Tephritidae) from the field: a tale of high variability across and within species'. *Frontiers in Microbiology* 11: 1-13. DOI: https://doi.org/10.3389/fmicb.2020.01890 (PR; IF 4.235)

de Haulleville, T., Bastin, J.-F., Bogaert, J. & **Beeckman, H.** 2020. 'Estimation de la biomasse aérienne d'un arbre à l'aide d'une équation de biomasse, leçons tirées à la réserve de Yangambi'. In: Bogaert, J., **Beeckman, H.**, De Cannière, C., Defourny, P. & Ponette, Q. (eds), *Les Forêts de la Tshopo: écologie, histoire et composition*. Gembloux: Presses universitaires de Liège - Agronomie, pp. 195-208. ISBN: 978-2-87016-157-9. (PR)

De Ligne, L., Van den Bulcke, J., Baetens, J.M., De Baets, B., Wang, G., De Windt, I., **Beeckman, H.** & Van Acker, J. 2020. 'Unraveling the natural durability of wood: revealing the impact of decay-influencing characteristics other than fungicidal components'. *Holzforschung* 1-11. DOI: https://doi.org/10.1515/hf-2020-0109 (PR; IF 1.826)

De Meyer, M. 2020. 'Tephritid fruit fly (Diptera: Tephritidae) invasions in an out of Africa'. *Meded. Zitt. K. Acad. Overzeese Wet* 64: 227-242. (PR)

De Meyer, M., Goergen, G. & **Jordaens, K.** 2020. 'Systematic revision of the Afrotropical *Phytomia* species (Diptera: Syrphidae)'. *Zootaxa* 4803: 201-250. (PR; IF 0.949)

De Meyer, M., Goergen, G. & **Jordaens, K.** 2020. 'Systematic revision of the genus *Senaspis* (Diptera: Syrphidae)'. *ZooKeys* 1003: 83-160. (PR; IF 1.137)

Decru, E., Vranken, N., Bragança, P., **Snoeks, J.** & Van Steenberge, M. 2020. 'Where ichthyofaunal provinces meet: the fish fauna of the Lake Edward system, East Africa'. *Journal of Fish Biology* 96 (5): 1186-1201. DOI: https://doi.org/10.1111/jfb.13992 (PR; IF 1.497)

Deklerck, V., De Ligne, L., Espinoza, E., **Beeckman, H.**, Van den Bulcke, J. & Van Acker, J. 2020. 'Assessing the natural durability of xylarium specimens: mini-block testing and chemical fingerprinting for small-sized samples'. *Wood Science and Technology* 54 (4): 981-1000. DOI: https://doi.org/10.1007/s00226-020-01186-1 (PR; IF 2.109)

Deklerck, V., Lancaster, C.A., Van Acker, J., Espinoza, E.O., Van den Bulcke, J. & **Beeckman, H.** 2020. 'Chemical fingerprinting of wood sampled along a pith-to-bark gradient for individual comparison and provenance identification'. *Forests* 11(1): 107. DOI: https://doi.org/10.3390/f11010107 (PR; IF 2.22)

Denys, C., Lalis, A., Aniskine, V., Gerbault-Seureau, M., Delapré, A., **Gilissen, E.**, Merker, S. & Nicolas, V. 2020. 'Integrative taxonomy of Guinean *Lemniscomys* species (Rodentia, Mammalia)'. *Journal of Vertebrate Biology* 69 (2): 1-20. DOI: https://doi.org/10.25225/jvb.20008 (PR)

Desoto, L., Cailleret, M., Sterck, F., Jansen, S., Kramer, K., **Robert, E.M.R.**, Aakala, T., Amoroso, M., Bigler, C., Camarero, J.J., Cufar, K., Gea-Izquierdo, G., Gillner, S., Haavik, L.J., Heres, A.-M., Kane, J., Kharuk, V.I., Kitzberger, T., Klein, T., Levanic, T., Linares, J.C., Mäkinen, H., Oberhuber, W., Papadopoulos, A., Rohner, B., Sangüesa-Barreda, G., Stojanovic, D.B., Suárez, M.L., Villalba, R. & Martinez-Vilalta, J. 2020. 'Low growth resilience to drought is related to future mortality risk in trees'. *Nature Communications* 11: 545. DOI: https://doi.org/10.1038/s41467-020-14300-5 (PR; IF 12.121)

Dierickx, K. & **Snoeks, J.** 2020. 'Protomelas krampus, a new paedophagous cichlid from Lake Malawi (Teleostei, Cichlidae)'. European Journal of Taxonomy 672: 1-18. DOI: https://doi.org/10.5852/ejt.2020.672 (PR; IF 1.394)

Evsyukov, A., Golovatch, S.I., Reip, H. & **Van den Spiegel, D.** 2020. 'The millipede tribe Leptoiulini in the Caucasus, with notes on its generic classification (Diplopoda: Julida: Julidae)'. *Zootaxa* 4778 (2): 237-280. (PR; IF 0.949)

Geraerts, M., Muterezi Bukinga, F., Vanhove, M., Pariselle, A., Chocha Manda, A., **Vreven, E., Huyse, T.** & Artois, A. 2020. 'Six new species of *Cichlidogyrus* Paperna, 1960 (Platyhelminthes: Monogenea) from the gills of cichlids (Teleostei: Cichliformes) from the Lomami River Basin (DRC: Middle Congo)'. *Parasites & Vectors* 13. DOI: https://doi.org/10.1186/s13071-020-3927-4 (PR; IF 3.4)

Goffette, Q., Germonpré, M., Rots, V., **Brecko, J.**, Goemaere, E. & Lefèvre, C. 2020. 'Bird bones from Trou de Chaleux and the human exploitation of birds during the late Magdalenian in Belgium'. *Journal of Archaeological Science: Reports* 29: 102096. DOI: https://doi.org/10.1016/j.jasrep.2019.102096 (PR; IF 1.3)

Gombeer, S., Nebesse, C., Musaba, P., Ngoy, S., Peeters, M., Vanderheyden, A., **Meganck, K., Smitz, N.**, Geers, F., Van Den Heuvel, S., Backeljau, T., **De Meyer, M** & Verheyen, E. 2020. 'Exploring the bushmeat market in Brussels, Belgium: a clandestine luxury business'. *Biodiversity and Conservation* 30 (1): 55-66. DOI: https://doi.org/10.1007/s10531-020-02074-7 (PR; IF 2.935)

Hardy, H., Knapp, S., Allan, E.L., Berger, F., Dixey, K., Döme, B., Gagnier, P-Y., Frank, J., Haston, E., Holstein, J., Kiel, S., Marschler, M., **Mergen, P.**, Phillips, S., Rabinovich, R., Chillon, BS., Sorensen, M., Thines, M., Trekels, M., Vogt, R., Wilson, S. & Wiltschke-Schrotta, K. 2020. 'SYNTHESYS+ Virtual Access - Report on the Ideas Call (October to November 2019)'. *Research Ideas and Outcomes* 6: e50354. DOI: https://doi.org/10.3897/rio.6.e50354 (PR)

Herculano-Houzel, S., Barros Da Cunha, F., Reed, J.L., Kaswera, C., **Gilissen, E.**, Pettigrew, J. & Manger, P.R. 2020. 'Microchiropterans have a diminutive cerebral cortex, not an enlarged cerebellum, compared to megachiropterans and other mammals'. *Journal of Comparative Neurology* 528 (17): 2978-2993. DOI: https://doi.org/10.1002/cne.24985 (PR; IF 2.801)

Hubau, W., Lewis, S.L., Phillips, O.L., Affum-Baffoe, K., **Beeckman, B.**, Cuní-Sanchez, A., Daniels, A.K., Ewango, C.E.N, Fauset, S., Mukenzi, J.M., Sheil, D., Sonké, B., Sullivan, M.J.P, Sunderland, T.C.H., Taedoumg, H., Thomas, S.C., White, L.J.T., Abernethy, K.A., Adu-Bredu, S., Amani, C.A., Baker, T.R., Banin, L.F., Baya, F., Begne, S.K., Bennett, A.C., Benedet, F., Bitariho, R., Bocko, Y.E., Boeckx, P., Boundja, P., Brienen, R.J.W., Brncic, T., Chezeaux, E., Chuyong, G.B., Clark, C.J., Collins, M., Comiskey, J.A., Coomes, D.A., Dargie, G.C., **de Haulleville, T.**, Kamdem, M.N.D., Doucet, J.-L.,

Esquivel-Muelbert, A., Feldpausch, T.R., Fofanah, A., Foli, E.G., Gilpin, M., Gloor, E., Gonmadje, C., Gourlet-Fleury, S., Hall, J.S., Hamilton, A.C., Harris, D.J., Hart, T.B., Hockemba, M.B.N., Hladik, A., Ifo, S.A., Jeffery, K.J., Jucker, T., **Kasongo Yakusu, E., Kearsley, E.**, Kenfack, D., Koch, A., Leal, M.E., Levesley, A., Lindsell, J.A., Lisingo, J., Lopez-Gonzalez, G., Lovett, J.C., Makana, J.-R., Malhi, Y., Marshall, A.R., Martin, J., Martin, E.H., Mbayu, F.M., Medjibe, V.P., Mihindou, V., Mitchard, E.T.A., Moore, S., Munishi, P.K.T., Bengone, N.N., Ojo, L., Ondo, F.E., Peh, K.S.H., Pickavance, G.C., Poulsen, A.D., Poulsen, J.R., Qie, L., Reitsma, J., Rovero, F., Swaine, M.D., Talbot, J., Taplin, J., Taylor, D.M., Thomas, D.W., **Toirambe, B.**, **Tshibamba Mukendi, J.**, Tuagben, D., Umunay, P.M., van der Heijden, G.M.F., Verbeeck, H., Vleminckx, J., Willcock, S., Wöll, H., Woods, J.T. & Zemagho, L. 2020. 'Asynchronous carbon sink saturation in African and Amazonian tropical forests'. *Nature* 579 (7797): 80-87. ISSN: 0028-0836. DOI: https://doi.org/10.1038/s41586-020-2035-0 (PR; IF 42.778)

Hubau, W., Lewis, S., Ewango, C., **Toirambe, B.** & **Beeckman, H.** 2020. 'Evolutie van de koolstofspons in tropische bossen'. *Bosrevue* 89a: 1-11. ISSN: 2565-6953. (PR)

Hufkens, K., **de Haulleville, T.**, Kearsley, E., **Jacobsen, K.**, **Beeckman, H.**, Stoffelen, P., Vandelook, F., Meeus, S., Amara, M., **Van Hirtum, L.**, Van den Bulcke, J., Verbeeck, H. & Wingate, L. 2020. 'Historical aerial surveys map long-term changes of forest cover and structure in the Central Congo Basin'. *Remote Sensing* 12 (4): 638. DOI: https://doi.org/10.3390/rs12040638 (PR; IF 4.509)

Ibala Zamba, A., **Vreven, E.**, Mamonekene, V., **Musschoot, T.**, Freedom Poaty Ngot, H. & **Snoeks, J.** 2020. 'Length-weight relationships of 37 freshwater fish species from the Lefini river, middle Congo River basin (Republic of the Congo)'. *Journal of Applied Ichthyology* 36 (3): 352-357. DOI: https://doi.org/10.1111/jai.14021 (PR; IF 0.650)

Ibáñez-Justicia, A., **Smitz, N.**, den Hartog, W., van de Vossenberg, B., De Wolf, K., Deblauwe, I., Van Bortel, W., Jacobs, F., Vaux, A.G.C., Medlock, J.M. & Stroo, A. 2020. 'Detection of Exotic Mosquito Species (Diptera: Culicidae) at International Airports in Europe'. *International Journal of Environmental Research and Public Health* 17 (10): 3450. DOI: https://doi.org/10.3390/ijerph17103450 (PR; IF 2.468)

Jacob, M., **De Ridder, M.**, Vandenabeele, M., Asfaha, T., Nyssen, J. & **Beeckman, H.** 2020. 'The response of *Erica arborea* L. tree growth to climate variability at the Afro-alpine tropical highlands of North Ethiopia'. *Forests* 11 (3): 310. DOI: https://doi.org/10.3390/f11030310 (PR; IF 2.221)

Jahanbanifard, M., Beckers, V., Koch, G., **Beeckman, H.**, Gravendeel, B., Verbeek, F., Baas, P., Priester, C. & Lens, F. 2020. 'Description and evolution of wood anatomical characters in the ebony wood genus *Diospyros* and its close relatives (Ebenaceae): a first step towards combatting illegal logging'. *IAWA Journal* 41 (4): 577-619. ISSN: 0928-1541. DOI: https://doi.org/10.1163/22941932-bja10040 (PR; IF 1.627)

Janssens, S.B., Couvreur, T.L.P, Mertens, A., Dauby, G., Dagallier, L.P.M, Vanden Abeele, S., Vandelook, F., Mascarello, M., Beeckman, H., Sosef, M., Droissart, V., van der Bank, M., Maurin, O., Hawthorne, W., Marshall, C., Réjou-Méchain, M., Beina, D., Baya, F., Merckx, V., Verstraete, B. & Hardy, O. 2020. 'A large-scale species level dated angiosperm phylogeny for evolutionary and ecological analyses'. *Biodiversity Data Journal* 8: e39677. ISSN: 1314-2836. DOI: https://doi.org/10.3897/bdj.8.e39677 (PR; IF 1.331)

Jorissen, M., **Huyse, T.**, Pariselle, A., Waluini Lunkayilakio, Muterezi Bukinga, Chocha Manda, A., Kapepula Kasembele, G., **Vreven, E.**, **Snoeks, J.**, Decru, E., Artois, T. & Vanhove, M. 2020. 'Historical museum collections help detect parasite species jumps after tilapia introductions in the Congo Basin'. *Biological Invasion* 22 (9): 2825-2844. DOI: https://doi.org/10.1007/s10530-020-02288-4 (PR; IF 3.1)

Kafuti, C., Bourland, N., De Mil, T., Meeus, S., Rousseau, M., Toirambe, B., Bolaluembe, P.-C., Ndjele, L. & Beeckman, H. 2020. 'Foliar and wood traits covary along a vertical gradient within the crown of long-lived light-demanding species of the Congo Basin semi-deciduous forest'. *Forests* 11 (1): 35. ISSN: 1999-4907. DOI: https://doi.org/10.3390/f11010035 (PR; IF 2.221)

Kattge, J., Bönisch, G., Diaz, S., Lavorel, S., Prentice, I.C., Leadley, P., Tautenhahn, S., Werner, G.D.A., Aakala, T., Abedi, M., Acosta, A.T.R, Adamidis, G.C., Adamson, K., Aiba, M., Albert, C.H., Alcántara, J.M., Alcázar, C.C., Aleixo, I., Ali, H., Amiaud, B., Ammer, C., Amoroso, M.M., Anand, M., Anderson, C., Anten, N., Antos, J., Apgaua, D.M.G., Ashman, T.-L., Asmara, D.H., Asner, G.P., Aspinwall, M., Atkin, O., Aubin, I., Baastrup-Spohr, L., Bahalkeh, K., Bahn, M., Baker, T., Baker, W.J., Bakker, J.P., Baldocchi, D., Baltzer, J., Banerjee, A., Baranger, A., Barlow, J., Barneche, D.R., Baruch, Z., Bastianelli, D., Battles, J., Bauerle, W., Bauters, M., Bazzato, E., Beckmann, M., Beeckman, H., Beierkuhnlein, C., Bekker, R., Belfry, G., Belluau, M., Beloiu, M., Benavides, R., Benomar, L., Berdugo-Lattke, M.L., Berenguer, E., Bergamin, R., Bergmann, J., Bergmann Carlucci, M., Berner, L., Bernhardt-Römermann, M., Bigler, C., Bjorkman, A.D., Blanco, C., Blonder, B., Blumenthal, D., Bocanegra-González, K.T., Boeckx, P., Bohlman, S., Böhning-Gaese, K., Boisvert-Marsh, L., Bond, W., Bond-Lamberty, B., Boom, A., Boonman, C.C.F., Bordin, K., Boughton, E.H., Boukili, V., Bowman, D.M.J., Bravo, S., Brendel, M.R., Broadley, M.R., Brown, K.A., Bruelheide, H., Brumnich, F., Bruun, H.H., Bruy, D., Buchanan, S.W., Bucher, S.F., Buchmann, N., Buitenwerf, R., Bunker, D.E., Bürger, J., Burrascano, S., Burslem, D.F.R, Butterfield, B.J., Byun, C., Marques, M., Scalon, M.C., Caccianiga, M., Cadotte, M., Cailleret, M., Camac, J., Camarero, J.J., Campany, C., Campetella, G., Campos, J.A., Cano-Arboleda, L., Canullo, R., Carbognani, M., Carvalho, F.,

Casanoves, F., Castagneyrol, B., Catford, J.A., Cavender-Bares, J., Cerabolini, B.E.L, Cervellini, M., Chacón-Madrigal, E., Chapin, K., Chapin, F.S., Chelli, S., Chen, S.-C., Chen, A., Cherubini, P., Chianucci, F., Choat, B., Chung, K.-S., Chytrý, M., Ciccarelli, D., Coll, L., Collins, C.G., Conti, L., Coomes, D., Cornelissen, J.H.C., Cornwell, W.K., Corona, P., Coyea, M., Craine, J., Craven, D., Cromsigt, J.P.G., Csecserits, A., Cufar, K., Cuntz, M., da Silva, A.C., Dahlin, K.M., Dainese, M., Dalke, I., Dalle Fratte, M., Dang-Le, A.T., Danihelka, J., Dannoura, M., Dawson, S., de Beer, A.J., De Frutos, A., De Long, J.R., Dechant, B., Delagrange, S., Delpierre, N., Derroire, G., Dias, A.S., Diaz-Toribio, M.H., Dimitrakopoulos, P.G., Dobrowolski, M., Doktor, D., Dřevojan, P., Dong, N., Dransfield, J., Dressler, S., Duarte, L., Ducouret, E., Dullinger, S., Durka, W., Duursma, R., Dymova, O., E-Vojtkó, A., Eckstein, R.L., Ejtehadi, H., Elser, J., Emilio, T., Engemann, K., Erfanian, M.B., Erfmeier, A., Esquivel-Muelbert, A., Esser, G., Estiarte, M., Domingues, T.F., Fagan, W.F., Fagúndez, J., Falster, D.S., Fan, Y., Fang, J., Farris, E., Fazlioglu, F., Feng, Y., Fernandez-Mendez, F., Ferrara, C., Ferreira, J., Fidelis, A., Finegan, B., Firn, J., Flowers, T.J., Flynn, D.F.B., Fontana, V., Forey, E., Forgiarini, C., François, L., Frangipani, M., Frank, D., Frenette-Dussault, C., Freschet, G.T., Fry, E.L., Fyllas, N.M., Mazzochini, G.G., Gachet, S., Gallagher, R., Ganade, G., Ganga, F., García-Palacios, P., Gargaglione, V., Garnier, E., Garrido, J.L., de Gasper, A.L., Gea-Izquierdo, G., Gibson, D., Gillison, A.N., Giroldo, A., Glasenhardt, M.-C., Gleason, S., Gliesch, M., Goldberg, E., Göldel, B., Gonzalez-Akre, E., Gonzalez-Andujar, J.L., González-Melo, A., González-Robles, A., Blackman, C., Graae, B.J., Granda, E., Graves, S., Green, W.A., Gregor, T., Gross, N., Guerin, G.R., Günther, A., Gutiérrez, A.G., Haddock, L., Haines, A., Hall, J., Hambuckers, A., Han, W., Harrison, S.P., Hattingh, W., Hawes, J.E., He, P., Heberling, J.M., Helm, A., Hempel, S., Hentschel, J., Hérault, B., Hereş, A.M., Herz, K., Heuertz, M., Hickler, T., Hietz, P., Higuchi, P., Hipp, A.L., Hirons, A., Hock, M., Hogan, J.A., Holl, K., Honnay, O., Hornstein, D., Hou, E., Hough-Snee, N., Hovstad, K.A., Ichie, T., Igić, B., Illa, E., Isaac, M., Ishihara, M., Ivanov, L., Ivanova, L., Iversen, J.M., Izquierdo, J., Jackson, R.B., Jackson, B., Jactel, H., Jagodzinski, A.M., Jandt, U., Jansen, S., Jenkins, T., Jentsch, A., Jespersen, J.R.P., Jiang, G.-F., Johansen, J.L., Johnson, D., Jokela, E.J., Joly, C.A., Jordan, G.J., Joseph, G.S., Junaedi, D., Junker, R.R., Justes, E., Kabzems, R., Kane, J., Kaplan, Z., Kattenborn, T., Kavelenova, L., **Kearsley, E.**, Kempel, A., Kenzo, T., Kerkhoff, A., Khalil, M.I., Kinlock, N.L., Kissling, W.D., Kitajima, K., Kitzberger, T., Kjøller, R., Klein, T., Kleyer, M., Klimešová, J., Klipel, J., Kloeppel, B., Klotz, S., Knops, J.M.H, Kohyama, T., Koike, F., Kollmann, J., Komac, B., Komatsu, K., König, C., Kraft, N.J.B, Kramer, K., Kreft, H., Kühn, I., Kumarathunge, D., Kuppler, J., Kurokawa, H., Kurosawa, Y., Kuyah, S., Laclau, J.-P., Lafleur, B., Lallai, E., Lamb, E., Lamprecht, A., Larkin, D.J., Laughlin, D., Le Bagousse-Pinguet, Y., le Maire, G., le Roux, P.C., le Roux, E., Lee, T., Lens, F., Lewis, S.L., Lhotsky, B., Li, Y., Li, X., Lichstein, J.W., Liebergesell, M., Lim, J.Y., Lin, Y.-S., Linares, J.C., Liu, C., Liu, D., Liu, U., Livingstone, S., Llusià, J., Lohbeck, M., López-García, A., Lopez-Gonzalez, G., Lososová, Z., Louault, F., Lukács, B.A., Lukes, P., Luo, Y., Lussu, M., Ma, S., Maciel Rabelo Pereira, C., Mack, M., Maire, V., Mäkelä, A., Mäkinen, H., Mendes Malhado, A.C., Mallik, A., Manning, P., Manzoni, S., Marchetti, Z., Marchino, L., Marcilio-Silva, V., Marcon, E., Marignani, M., Markesteijn, L., Martin, A., Martínez-Garza, C., Martínez-Vilalta, J., Mašková, T., Mason, K., Mason, N., Massad, T.J., Masse, J., Mayrose, I., Mccarthy, J., Mccormack, M.L., Mcculloh, K., Mcfadden, I.R., Mcgill, B.J., Mcpartland, M.Y., Medeiros, J.S., Medlyn, B., Meerts, P., Mehrabi, Z., Meir, P., Melo, F.P.L., Mencuccini, M., Meredieu, C., Messier, J., Mészáros, I., Metsaranta, J., Michaletz, S.T., Michelaki, C., Migalina, S., Milla, R., Miller, J.E.D, Minden, V., Ming, R., Mokany, K., Moles, A.T., Molnár, A., Molofsky, J., Molz, M., Montgomery, R.A., Monty, A., Moravcová, L., Moreno-Martínez, A., Moretti, M., Mori, A.S., Mori, S., Morris, D., Morrison, J., Mucina, L., Mueller, S., Muir, C.D., Müller, S.C., Munoz, F., Myers-Smith, I.H., Myster, R.W., Nagano, M., Naidu, S., Narayanan, A., Natesan, B., Negoita, L., Nelson, A.S., Neuschulz, E.L., Ni, J., Niedrist, G., Nieto, J., Niinemets, Ü., Nolan, R., Nottebrock, H., Nouvellon, Y., Novakovskiy, A., Nystuen, K.O., O'grady, A., O'Hara, K., O'Reilly-Nugent, A., Oakley, S., Oberhuber, W., Ohtsuka, T., Oliveira, R., Öllerer, K., Olson, M.E., Onipchenko, V., Onoda, Y., Onstein, R.E., Ordonez, J.C., Osada, N., Ostonen, I., Ottaviani, G., Otto, S., Overbeck, G.E., Ozinga, W.A., Pahl, A.T., Paine, C.E.T., Pakeman, R.J., Papageorgiou, A.C., Parfionova, E., Pärtel, M., Patacca, M., Paula, S., Paule, J., Pauli, H., Pausas, J.G., Peco, B., Penuelas, J., Perea, A., Peri, P.L., Petisco-Souza, A.C., Petraglia, A., Petritan, A.M., Phillips, O.L., Pierce, S., Pillar, V.D., Pisek, J., Pomogaybin, A., Poorter, H., Portsmuth, A., Poschlod, P., Potvin, C., Pounds, D., Powell, A.S., Power, S.A., Prinzing, A., Puglielli, G., Pyšek, P., Raevel, V., Rammig, A., Ransijn, J., Ray, C.A., Reich, P.B., Reichstein, M., Reid, D.E.B, Réjou-Méchain, M., Resco de Dios, V., Ribeiro, S., Richardson, S., Riibak, K., Rillig, M.C., Riviera, R., Robert, E.M.R., Roberts, S., Robroek, B., Roddy, A., Rodrigues, A.V., Rogers, A., Rollinson, E., Rolo, V., Römermann, C., Ronzhina, D., Roscher, C., Rosell, J.A., Rosenfield, M.F., Rossi, C., Roy, D.B., Royer-Tardif, S., Rüger, N., Ruiz-Peinado, R., Rumpf, S.B., Rusch, G.M., Ryo, M., Sack, L., Saldaña, A., Salgado-Negret, B., Salguero-Gomez, R., Santa-Regina, I., Santacruz-García, A.C., Santos, J., Sardans, J., Schamp, B., Scherer-Lorenzen, M., Schleuning, M., Schmid, B., Schmidt, M., Schmitt, S., Schneider, J.V., Schowanek, S.D., Schrader, J., Schrodt, F., Schuldt, B., Schurr, F., Selaya Garvizu, G., Semchenko, M., Seymour, C., Sfair, J.C., Sharpe, J.M., Sheppard, C.S., Sheremetiev, S., Shiodera, S., Shipley, B., Shovon, T.A., Siebenkäs, A., Sierra, C., Silva, V., Silva, M., Sitzia, T., Sjöman, H., Slot, M., Smith, N.G., Sodhi, D., Soltis, P., Soltis, D., Somers, B., Sonnier, G., Sørensen, M.V., Sosinski Jr, E.E., Soudzilovskaia, N.A., Souza, A.F., Spasojevic, M., Sperandii, M.G., Stan, A.B., Stegen, J., Steinbauer, K., Stephan, J.G., Sterck, F., Stojanovic, D.B., Strydom, T., Suarez, M.L., Svenning, J.-C., Svitková, I., Svitok, M., Svoboda, M., Swaine, E., Swenson, N., Tabarelli, M., Takagi, K., Tappeiner, U., Tarifa, R., Tauugourdeau, S., Tavsanoglu, C., te Beest, M., Tedersoo, L., Thiffault, N.,

Thom, D., Thomas, E., Thompson, K., Thornton, P.E., Thuiller, W., Tichý, L., Tissue, D., Tjoelker, M.G., Tng, D.Y.P, Tobias, J., Török, P., Tarin, T., Torres-Ruiz, J.M., Tóthmérész, B., Treurnicht, M., Trivellone, V., Trolliet, F., Trotsiuk, V., Tsakalos, J.L., Tsiripidis, T., Tysklind, N., Umehara, T., Usoltsev, V., Vadeboncoeur, M., Vaezi, J., Valladares, F., Vamosi, J., van Bodegom, P.M., van Breugel, M., Van Cleemput, E., van de Weg, M., van der Merwe, S., van der Plas, F., van der Sande, M.T., van Kleunen, M., Van Meerbeek, K., Vanderwel, M., Vanselow, K.A., Varhammar, A., Varone, L., Vasquez Valderrama, M.Y., Vassilev, K., Vellend, M., Veneklaas, E.J., Verbeeck, H., Verheyen, K., Vibrans, A., Vieira, I., Villacís, J., Violle, C., Vivek, P., Wagner, K., Waldram, M., Waldron, A., Walker, A.P., Waller, M., Walther, G., Wang, H., Wang, F., Wang, W., Watkins, H., Watkins, J., Weber, U., Weedon, J.T., Wei, L., Weigelt, P., Weiher, E., Wells, A.W., Wellstein, C., Wenk, E., Westoby, M., Westwood, A., White, P.J., Whitten, M., Williams, M., Winkler, D.E., Winter, K., Womack, C., Wright, I.J., Wright, S.J., Wright, J., Pinho, B.X., Ximines, F., Yamada, T., Yamaji, K., Yanai, R., Yankov, N., Yguel, B., Zanini, K.J., Zanne, A.E., Zelený, D., Zhao, Y.-P., Zheng, J., Zheng, Ji., Zieminska, K., Zirbel, C.R., Zizka, G., Zo-Bi, I.C., Zotz, G. & Wirth, C. 2020. 'TRY plant trait database - enhanced coverage and open access'. *Global Change Biology* 26: 119-188. ISSN: 1354-1013. DOI: https://doi.org/10.1111/gcb.14904 (PR; IF 8.88)

Kisekelwa, T., **Snoeks, J.** & **Vreven, E.** 2020. 'An annotated checklist of the fish fauna of the river systems draining the Kahuzi-Biega National Park (Upper Congo: Eastern DR Congo)'. *Journal of Fish Biology* 96 (3): 700-721. DOI: https://doi.org/10.1111/jfb.14264 (PR; IF 1.497)

Maetens, H., Van Steenberge, M., **Snoeks, J.** & Decru, E. 2020. 'Revalidation of *Enteromius alberti* and presence of *Enteromius* cf. *mimus* (Cypriniformes: Cyprinidae) in the Lake Edward system, East Africa'. *European Journal of Taxonomy* 700: 1-28. DOI: https://doi.org/10.5852/ejt.2020.700 (PR; IF 1.394)

Manrakhan, A., Daneel, J.H., Beck, R., Love, C., Gilbert, M., Virgilio, M. & De Meyer, M. 2020. 'Effects of male lure dispensers and trap types for monitoring of *Ceratitis capitata* and *Bactrocera dorsalis* (Diptera: Tephritidae)'. *Pest Management Science*. DOI: https://doi.org/10.1002/ps.6246 (PR; IF 3.75)

Manrakhan, A., Grout, T.G., Grové, T., Daneel, J.H., Stephen, P.R., Weldon, C.W., **De Meyer, M.**, Carstens, E. & Hattingh, V. 2020. 'A survey of *Ceratitis quinaria* (Bezzi) (Diptera, Tephritidae) in citrus production areas in South Africa'. *African Entomology* 28 (1): 35-43. DOI: https://doi.org/10.4001/003.028.0035 (PR; IF 0.59)

Mukweze Mulelenu, C., Katemo Manda, B., Decru, E., Chocha Manda, A. & **Vreven, E.** 2020. 'The *Cyphomyrus* Myers 1960 (Osteoglossiformes: Mormyridae) of the Lufira basin (Upper Lualaba: DR Congo): A generic reassignment and the description of a new species'. *Journal of Fish Biology* 96 (5): 1123-1141. DOI: https://doi.org/10.1111/jfb.14237 (PR; IF 1.497)

Mullens, N., Sonet, G., Decru, E., Virgilio, M., Snoeks, J. & Vreven, E. 2020. 'Mitogenomic characterization and systematic placement of the Congo blind barb *Caecobarbus geertsii* (Cypriniformes: Cyprinidae)'. *International Journal of Biological Macromolecules* 161: 292-298. DOI: https://doi.org/10.1016/j. ijbiomac.2020.05.248 (PR; IF 4.784)

Muscarella, R., Emilio, T., Phillips, O.L., Lewis, S.L., Slik, F., Baker, W.J., Couvreur, T.L.P., Eiserhardt, W.L., Svenning, J.-C., Affum-Baffoe, K., Aiba, S.-I., de Almeida, E.C., de Almeida, S.S., Almeida de Oliveira, E., Álvarez-Dávila, E., Alves, L.F., Alvez-Valles, C.M., Alvim Carvalho, F., Alzate Guarin, L., Andrade, A., Aragão, L.E.O.C., Araujo Murakami, A., Arroyo, L., Ashton, P.S., Aymard Corredor, G.A., Baker, T.R., Barbosa de Camargo, P., Barlow, J., Bastin, J.-F., Bengone, N.N., Berenguer, E., Berry, N., Blanc, L., Böhning-Gaese, K., Bonal, D., Bongers, F., Bradford, M., Brambach, F., Brearley, F.Q., Brewer, S.W., Camargo, J.L.C., Campbell, D.G., Castilho, C.V., Castro, W., Catchpole, D., Cerón Martínez, C.E., Chen, S., Chhang, P., Cho, P., Chutipong, W., Clark, C., Collins, M., Comiskey, J.A., Corrales Medina, M.N., Costa, F.R.C., Culmsee, H., David-Higuita, H., Davidar, P., del Aguila-Pasquel, J., Derroire, G., Di Fiore, A., Do, T.V., Doucet, J.-L., Dourdain, A., Drake, D.R., Ensslin, A., Erwin, T., Ewango, C.E.N., Ewers, R.M., Fauset, S., Feldpausch, T.R., Ferreira, J., Ferreira, L.V., Fischer, M., Franklin, J., Fredriksson, G.M., Gillespie, T.W., Gilpin, M., Gonmadje, C., Gunatilleke, A.U.N, Hakeem, K.R., Hall, J.S., Hamer, K.C., Harris, D.J., Harrison, R. D., Hector, A., Hemp, A., Herault, B., Hidalgo Pizango, C.G., Honorio Coronado, E N., Hubau, W., Hussain, M.S., Ibrahim, F.-H., Imai, N., Joly, C.A., Joseph, S.K.A., Kartawinata, K., Kassi, J., Killeen, T.J., Kitayama, K., Klitgård, B.B., Kooyman, R., Labrière, N., Larney, E., Laumonier, Y., Laurance, S.G., Laurance, W.F., Lawes, M.J., Levesley, A., Lisingo, J., Lovejoy, T., Lovett, J.C., Lu, X., Lykke, A.M., Magnusson, W.E., Mahayani, N.P.D., Malhi, Y., Mansor, A., Marcelo Peña, J.L., Marimon-Junior, B.H., Marshall, A.R., Melgaco, K., Mendoza Bautista, C., Mihindou, V., Millet, J., Milliken, W., Mohandass, D., Monteagudo Mendoza, A.L., Mugerwa, B., Nagamasu, H., Nagy, L., Seuaturien, N., Nascimento, M.T., Neill, D.A., Neto, L.M., Nilus, R., Núñez Vargas, M.P., Nurtjahya, E., de Araújo, R.N.O., Onrizal, O., Palacios, W.A., Palacios-Ramos, S., Parren, M., Paudel, E., Morandi, P.S., Pennington, R.T., Pickavance, G., Pipoly, J.J., Pitman, N.C.A., Poedjirahajoe, E., Poorter, L., Poulsen, J.R., Prasad, P.R.C., Prieto, A., Puyravaud, J.-P., Qie, L., Quesada, C.A., Ramírez-Angulo, H., Razafimahaimodison, J.C., Reitsma, J.M., Requena-Rojas, E.J., Restrepo Correa, Z., Reynel Rodriguez, C., Roopsind, A., Rovero, F., Rozak, A., Rudas Lleras, A., Rutishauser, E., Rutten, G., Punchi-Manage, R., Salomão, R.P., Sam, H.V., Sarker, S.K., Satdichanh, M., Schietti, J., Schmitt, C.B., Schwantes Marimon, B., Senbeta, F.,

Sharma, L.N., Sheil, D., Sierra, R., Silva-Espejo, J.E., Silveira, M., Sonké, B., Steininger, M.K., Steinmetz, R., Stévart, T., Sukumar, R., Sultana, A., Sunderland, T.C.H, Suresh, H.S., Tang, J., Tanner, E., ter Steege, H., Terborgh, J.W., Theilade, I., Timberlake, J., Torres-Lezama, A., Umunay, P., Uriarte, M., Valenzuela Gamarra, L., van de Bult, M., van der Hout, P., Vasquez Martinez, R., Vieira, I.C.G, Vieira, S.A., Vilanova, E., Villalobos Cayo, J., Wang, O., Webb, C.O., Webb, E.L., White, L., Whitfeld, T.J.S, Wich, S., Willcock, S., Wiser, S.K., Young, K.R., Zakaria, R., Zang, R., Zartman, C.E., Zo-Bi, I.C. & Balslev, H. 2020. 'The global abundance of tree palms'. *Global Ecology and Biogeography* 29 (9): 1495-1514. DOI: https://doi.org/10.1111/geb.13123 (PR; IF 5.667)

Okello, J.A., Kairo, J.G., Dahdouh-Guebas, F., **Beeckman, H.** & Koedam, N. 2020. 'Mangrove trees survive partial sediment burial by developing new roots and adapting their root, branch and stem anatomy'. *Trees* 34 (1): 37-49. ISSN: 0931-1890. DOI: https://doi.org/10.1007/s00468-019-01895-6 (PR; IF 2.125)

Ouédraogo, D.-Y., Hardy, O.J., Doucet, J.-L., Janssens, S.B., Wieringa, J.J., Stoffelen, P., **Angoboy Ilondea, B.**, Baya, F., **Beeckman, H.**, Daïnou, K., Dubiez, E., Gourlet-Fleury, S. & Fayolle, A. 2020. 'Latidudinal shift in the timing of flowering of tree species across tropical Africa: insights from field observations and herbarium collections'. *Journal of Tropical Ecology* 36 (4): 159-173. DOI: https://doi.org/10.1017/s0266467420000103 (PR; IF 1.280)

Panzou, G.J.L., Fayolle, A., Jucker, T., Phillips, O.L., Bohlman, S., Banin, L.F., Lewis, S.L., Affum-Baffoe, K., Alves, L.F., Antin, C., Arets, E., Arroyo, L., Baker, T.R., Barbier, N., **Beeckman, H.**, Berger, U., Bocko, Y.E., Bongers, F., Bowers, S., Brade, T., Brondizio, E.S., Chantrain, A., Chave, J., Compaore, H., Coomes, D., Diallo, A., Dias, A.S., Dimobe, K., Djagbletey, G.D., Domingues, T., Doucet, J.-L., Drouet, T., Forni, E., Godlee, J.L., Gourlet-Fleury, S., Hien, F., Lida, Y., **Angoboy Ilondea, B.**, Muledi, J.I., Jacques, P., Kuyah, S., Lopez-Portillo, J., Loumeto, J.J., Marimon, B.H., Marimon, B.S., Mensah, S., Mitchard, E.T.A., Moncrieff, G.R., Narayanan, A., O'Brien, S.T., Ouedraogo, K., Palace, M.W., Pelissier, R., Ploton, P., Poorter, L., Ryan, C.M., Saiz, G., Santos, K., Schlund, M., Sellan, G., Sonke, B., Sterck, F., Thibaut, Q., Van Hoef, Y., Veenendaal, E., Vovides, A.G., Xu, Y., Yao, T.L., Feldpausch, T.R. & Kerkhoff, A. 2020. 'Pantropical variability in tree crown allometry'. *Global Ecology and Biogeography* 30 (2): 459-475. ISSN: 1466-822X. DOI: https://doi.org/10.1111/geb.13231 (PR; IF 6.446)

Rahman, S., Sass-Klaassen, U., Zuidema, P.A., **Chowdhury, Q** & **Beeckman, H.** 2020. 'Salinity drives growth dynamics of the mangrove tree *Sonneriata apetala* Buch.-Ham. in the Sundarbans, Bangladesh'. *Dendrochronologia* 62: 125711. DOI: https://doi.org/10.1016/j.dendro.2020.125711 (PR; IF 2.107)

Ruiz-Arce, R., Todd, T.N., Deleon, R., Barr, N.B., **Virgilio, M., De Meyer, M.** & Mcpheron, B. 2020. 'Worldwide phylogeography of *Ceratitis capitata* (Diptera: Tephritidae) using mitochondrial DNA'. *Journal of Economic Entomology* 113 (3): 1455-1470. DOI: https://doi.org/10.1093/jee/toaa024 (PR; IF 1.97)

Schols, R., Mudavanhu, A., Carolus, H., Hammoud, C., Muzarabani, K., Barson, M. & Huyse, T. 2020. Exposing the Barcoding Void: An Integrative Approach to Study Snail-Borne Parasites in a One Health Context'. Frontiers in Veterinary Science 7: 605280 DOI: https://doi.org/10.3389/fvets.2020.605280 (PR; IF 2.245)

Sullivan, M.J.P., Lewis, S.L., Affum-Baffoe, K., Castilho, C., Costa, F., Sanchez, A.C., Ewango, C.E.N., Hubau, W., Marimon, B., Monteagudo-Mendoza, A., Qie, L., Sonke, B., Martinez, R.V., Baker, T.R., Brienen, R.J.W, Feldpausch, T.R., Galbraith, D., Gloor, M., Malhi, Y., Aiba, S.-I., Alexiades, M.N., Almeida, E.C., de Oliveira, E.A., Davila, E.A., Loayza, P.A., Andrade, A., Vieira, S.A., Aragao, L.E.O.C., Araujo-Murakami, A., Arets, E.J.M.M., Arroyo, L., Ashton, P., Aymard, G.C., Baccaro, F.B., Banin, L.F., Baraloto, C., Camargo, P.B., Barlow, J., Barroso, J., Bastin, J.-F., Batterman, S.A., Beeckman, H., Begne, S.K., Bennett, A.C., Berenquer, E., Berry, N., Blanc, L., Boeckx, P., Bogaert, J., Bonal, D., Bongers, F., Bradford, M., Brearley, F.Q., Brncic, T., Brown, F., Burban, B., Camargo, J.L., Castro, W., Ceron, C., Ribeiro, S.C., Moscoso, V.C., Chave, J., Chezeaux, E., Clark, C.J., de Souza, F.C., Collins, M., Comiskey, J.A., Valverde, F.C., Medina, M.C., da Costa, L., Dancak, M., Dargie, G.C., Davies, S., Cardozo, N.D., de Haulleville, T., de Medeiros, M.B., del Aguila-Pasquel, J., Derroire, G., Di Fiore, A., Doucet, J.-L., Dourdain, A., Droissart, V., Duque, L.F., Ekoungoulou, R., Elias, F., Erwin, T., Esquivel-Muelbert, A., Fauset, S., Ferreira, J., Flores Llampazo, G.R., Foli, E., Ford, A., Gilpin, M., Hall, J.S., Hamer, K.C., Hamilton, A.C., Harris, D.J., Hart, T.B., Hedl, R., Herault, B., Herrera, R., Higuchi, N., Hladik, A., Coronado, E.H., Huamantupa-Chuquimaco, I., Huasco, W.H., Jeffery, K.J., Jimenez-Rojas, E., Kalamandeen, M., Djuikouo, M.N.K., Kearsley, E., Umetsu, R.K., Kho, L.K., Killeen, T., Kitayama, K., Klitgaard, B., Koch, A., Labriere, N., Laurance, W., Laurance, S., Leal, M.E., Levesley, A., Lima, A.J.N., Lisingo, J., Lopes, A.P., Lopez-Gonzalez, G., Lovejoy, T., Lovett, J.C., Lowe, R., Magnusson, W.E., Malumbres-Olarte, J., Manzatto, A.G., Marimon, B.H., Marthews, T., de Almeida Reis, S.M., Maycock, C., Melgaco, K., Mendoza, C., Metali, F., Mihindou, V., Milliken, W., Mitchard, E.T.A., Morandi, P.S., Mossman, H.L., Nagy, L., Nascimento, H., Neill, D., Nilus, R., Nuñez Vargas, P., Palacios, W., Camacho, N.P., Peacock, J., Pendry, C., Peñuela-Mora, M.C., Pickavance, G.C., Pipoly, J., Pitman, N., Playfair, M., Poorter, L., Poulsen, J.R., Poulsen, A.D., Preziosi, R., Prieto, A., Primack, R.B., Ramirez-Angulo, H., Reitsma, J., Réjou-Méchain, M., Restrepo Correa, Z., de Sousa, T.R., Bayona, L.R., Roopsind, A., Rudas, A.,

Rutishauser, E., Abu Salim, K., Salomao, R.P., Schietti, J., Sheil, D., Silva, R.C., Silva-Espejo, J., Valeria, C.S., Silveira, M., Simo-Droissart, M., Simon, M.F., Singh, J., Soto Shareva, Y.C., Stahl, C., Stropp, J., Sukri, R., Sunderland, T., Svatek, M., Swaine, M.D., Swamy, V., Taedoumg, H., Talbot, J., Taplin, J., Taylor, D., ter Steege, H., Terborgh, J., Thomas, R., Thomas, S.C., Torres-Lezama, A., Umunay, P., Gamarra, L.V., van der Heijden, G., van der Hout, P., van der Meer, P., van Nieuwstadt, M., Verbeeck, H., Vernimmen, R., Vicentini, A., Guimaraes Vieira, I.C., Torre, E.V., Vleminckx, J., Vos, V., Wang, O., White, L.J.T., Willcock, S., Woods, J.T., Wortel, V., Young, K., Zagt, R., Zemagho, L., Zuidema, P.A., Zwerts, J.A. & Phillips, O.L. 2020. 'Long-term thermal sensitivity of Earth's tropical forests'. *Science* 368 (6493): 869-874. DOI: https://doi.org/10.1126/science.aaw7578 (PR; IF 41.845)

Toirambe, B., Ewango, C. & **Beeckman, H.** 2020. 'Conservation, recherche forestière et développement à la réserve de biosphère de Yangambi'. In: Bogaert J., **Beeckman, H.,** De Cannière, C., Defourny, P. & Ponette, Q. (ed.), *Les Forêts de la Tshopo: écologie, histoire et composition*, pp. 255-265. Gembloux: Presses universitaires de Liège - Agronomie. ISBN: 978-2-87016-157-9. (PR)

Tshibamba Mukendi, J., Hubau, W., Meniko, J.-P., Lisingo Wa Lisingo, J., Ntahobavuka, H., Boyemba, F.B., Beeckman, H. & De Cannière, C. 2020. 'Analyse comparative de la flore de quatre types forestiers dans la réserve forestière de Yoko'. In: Bogaert, J., Beeckman, H., De Cannière, C., Defourny, P. & Ponette, Q. (ed.), Les Forêts de la Tshopo: écologie, histoire et composition, pp. 101-116. Gembloux: Presses universitaires de Liège - Agronomie. ISBN: 978-2-87016-157-9. (PR)

Tshibamba Mukendi, J., Hubau, W., Meniko, J.-P., Ntahobavuka, H., Boyemba, F.B., Beeckman, H. & De Cannière, C. 2020. 'Perspectives de reconstitution historique de la flore de la réserve forestière de Yoko à travers l'analyse de l'anthracomasse de ses sols'. In: Bogaert, J., Beeckman, H., De Cannière, C., Defourny, P. & Ponette, Q. (ed.), Les Forêts de la Tshopo: écologie, histoire et composition, pp. 117-130. Gembloux: Presses universitaires de Liège - Agronomie. ISBN: 978-2-87016-157-9. (PR)

Tshibamba Mukendi, J., Hubau, W., Ntahobavuka, H., Boyemba Bosela, F., De Cannière, C. & Beeckman, H. 2020. 'L'approche pédoanthracologique pour la mise en évidence d'indices de perturbation - cas des Forêts de la région de Kisangani'. In: Bogaert, J., Beeckman, H., De Cannière, C., Defourny, P. & Ponette, Q. (ed.), Les Forêts de la Tshopo: écologie, histoire et composition, pp. 91-100. Gembloux: Presses universitaires de Liège - Agronomie. ISBN: 978-2-87016-157-9. (PR)

Tshibamba Mukendi, J., Hubau, W., Ntahobavuka, H., Boyemba, F.B., De Cannière, C. & Beeckman, H. 2020. 'Analyse pédoanthracologique des peuplements à *Pericopsis elata* dans la réserve forestière de Yoko'. In: Bogaert, J., Beeckman, H., De Cannière, C., Defourny, P. & Ponette, Q. (ed.), *Les Forêts de la Tshopo: écologie, histoire et composition*, pp. 131-149. Gembloux: Presses universitaires de Liège – Agronomie. ISBN: 978-2-87016-157-9. (PR)

Tshibamba Mukendi, J., Hubau, W., Ntahobavuka, H., Boyemba, F.B., De Cannière, C. & **Beeckman, H.** 2020. 'Dynamique de la végétation ligneuse de la réserve forestière de Yoko au cours des deux derniers millénaires'. In: Bogaert, J., **Beeckman, H.**, De Cannière, C., Defourny, P. & Ponette, Q. (ed.), *Les Forêts de la Tshopo: écologie, histoire et composition,* pp. 151-172. Gembloux: Presses universitaires de Liège - Agronomie. ISBN: 978-2-87016-157-9. (PR)

Van Den Broucke, S., Potters, I., Van Esbroeck, M., Cnops, L., Siozopoulou, V., Hammoud, C., **Huyse, T.** & Bottieau, E. 2020. 'A woman with chronic lower abdominal pain, vaginal discharge and infertility after a stay in Mali'. *Open Forum Infectious Diseases* 7 (5): ofaa133. DOI: https://doi.org/10.1093/ofid/ofaa133 (PR)

Van den Spiegel, D., Shelley, R.M. & Golovatch, S.I. 2020. 'The millipede genus *Globanus* Attems, 1914, endemic to São Tomé and Príncipe, with the description of a new species (Diplopoda, Spirostreptida, Spirostreptidae)'. *Zookeys* 930: 61-74. DOI: https://doi.org/10.3897/zookeys.930.49236 (PR; IF 1.137)

Vander Mijnsbrugge, K., Turcsan, A., Erdelyi, E. & **Beeckman, H.** 2020. 'Drought treated seedlings of *Quercus petraea* (Matt.) Liebl., Q. robur L. and their morphological intermediates show differential radial growth and wood anatomical traits'. *Forests* 11 (2): 250. DOI: https://doi.org/10.3390/f11020250 (PR; IF 2.221)

Vranken, N., Van Steenberge, M. & **Snoeks, J.** 2020. 'Similar ecology, different morphology: Three new species of oral-mollusc shellers from Lake Edward'. *Journal of Fish Biology* 96 (5): 1202-1217. DOI: https://doi.org/10.1111/jfb.14107 (PR; IF 1.497)

Vranken, N., Van Steenberge, M., Balagizi, A. & **Snoeks, J.** 2020. 'The synonymy of *Haplochromis pharyngalis* and *Haplochromis petronius* (Cichlidae)'. *Journal of Fish Biology* 97 (5): 1554-1559. DOI: https://doi.org/10.1111/jfb.14455 (PR; IF 1.497)

Vranken, N., Van Steenberge, M., **Kayenbergh, A.** & **Snoeks, J.** 2020. 'The lobed-lipped species of *Haplochromis* (Teleostei, Cichlidae) from Lake Edward, two instead of one'. *Journal of Great Lakes Research* 46 (5): 1079-1089. DOI: https://doi.org/10.1016/j.jglr.2019.05.005 (PR)

Non-peer-reviewed publications

De Weerdt, J., Toirambe, B., Delvaux, C., Verhegghen, A., Defourny, P. & **Beeckman, H.** 2020. 'La Tshopo physique. La végétation'. In: **Omasombo, J.** (ed.) *et al., Tshopo. Laborieuse construction politico-administrative coloniale muée en bastion du nationalisme congolais*. Series: 'Monographies des provinces de la République démocratique du Congo', vol. 14, Tervuren: RMCA, pp. 61-70. ISBN: 978-9-4926-6970-4.

Hubau, W., Lewis, S., Ewango, C., Tshibamba Mukendi, J., Beeckman, H. & Van de Voorde, J. 2020. 'Hebben we de longen van onze planeet tot het uiterste gedreven? Het vermogen van tropische bossen om CO2 uit de atmosfeer te verwijderen, neemt sneller af dan men tot nu dacht'. *Science Connection* 63: 16-23. ISSN: 1780-8448. Available in French: 'Les poumons de notre planète ont-ils atteint leurs limites? La capacité des forêts tropicales à capturer du CO2 de l'atmosphère diminue plus rapidement que prévu'. *Science Connection* 63: 16-23. ISSN: 1780-8456.

Others

Deblauwe, I., De Wolf, K., **Smitz, N.**, Vanslembrouck, A., Schneider, A., De Witte, J., Verlé, I., Dekoninck, W., **De Meyer, M.**, Backeljau, T., Gombeer, S., **Meganck, K.**, Van Bourgonie, Y.R., Vanderheyden, A., Müller, R. & Van Bortel, W. 2020. Monitoring of exotic mosquitoes in Belgium (MEMO): Final Report Phase 7 Part 1: MEMO results. NEHAP. 100 p.

Earth Sciences

Peer-reviewed publications

Buyse, F., **Dewaele, S.**, **Decrée, S.** & **Mees, F**. 2020. 'Mineralogical and geochemical study of the rare earth element mineralization at Gakara (Burundi)'. *Ore Geology Reviews* 124: 103659. (PR)

De Putter, T. & Ruffet, G. 2020. 'Supergene manganese ore records 75 Myr-long Campanian to Pleistocene geodynamic evolution and weathering history of the Central African Great Lakes Region - Tectonics drives, climate assists'. *Gondwana Research* 83: 96-117. DOI: https://doi.org/10.1016/j.gr.2020.01.021 (PR)

Depicker, A., Jacobs, L., **Delvaux, D.**, Havenith, H.B., Maki Mateso, J-.C., Govers, G. & **Dewitte, O.** 2020. 'The added value of a regional landslide susceptibility assessment: The western branch of the East African Rift'. *Geomorphology* 353: 106886. DOI: https://doi.org/10.1016/j.geomorph.2019.106886 (PR; IF 3.819)

Dille, A., Poppe, S., Mossoux, S., Soulé, H. & Kervyn, M. 2020. 'Modelling lahars on a poorly eroded basaltic shield: Karthala volcano, Grande Comore Island'. *Frontiers in Earth Science* 8: 369. DOI: https://doi.org/10.3389/feart.2020.00369 (PR; IF 2.7)

Folie, A., **Mees, F.**, **De Putter, T**. & Smith, T. 2020 (in press). 'Presence of the large aquatic snake *Palaeophis africanus* in the middle Eocene marine margin of the Congo Basin, Cabinda, Angola'. *Geobios*. DOI: https://doi.org/10.1016/j.geobios.2020.11.002 (PR)

Herbosch, A., **Liégeois, J.-P.**, Gärtner, A., Hofmann, M. & Linnemann, U. 2020. 'The Stavelot-Venn Massif (Ardenne, Belgium), a rift shoulder basin ripped off the West African craton: Cartography, stratigraphy, sedimentology, new U-Pb on zircon ages, geochemistry and Nd isotopes evidence'. *Earth Science Reviews* 203: 103142. (PR; IF 9.53)

Jacobs, L., Kervyn, M., Reichenbach, P., Rossi, M., Marchesini, I., Alvioli, M. & **Dewitte, O.** 2020. 'Regional susceptibility assessments with heterogeneous landslide information: Slope unit- vs. pixel-based approach'. *Geomorphology* 356: 107084. DOI: https://doi.org/10.1016/j.geomorph.2020.107084 (PR; IF 3.819)

James, M.R., Carr, B., D'Arcy, F., Diefenbach, A., Diettrich, H., Fornaciai, A., Lev, E., Liu, E., Pieri, D., Rodgers, M., **Smets, B.**, Terada, A., von Aulock, F., Walter, T., Wood, K. & Zorn, E. 2020. 'Volcanological applications of unoccupied aircraft systems (UAS): Developments, strategies, and future challenges'. *Volcanica* 3 (1): 67-114. DOI: https://doi.org/10.30909/vol.03.01.67114 (PR)

Karlshausen, C. & **De Putter, T.** 2020. 'From limestone to sandstone - building stone of Theban architecture during the reigns of Hatshepsut and Thutmosis III'. *The Journal of Egyptian Archaeology* 106 (1-2): 215-227. DOI: https://doi.org/10.1177/0307513320978411 (PR)

- Mboga, N., Grippa, T., Georganos, S., Vanhuysse, S., **Smets, B.**, **Dewitte, O.**, Wolff, E. & Lennert, M. 2020. 'Fully convolutional networks for land cover classification from historical panchromatic aerial photographs'. *ISPRS Journal of Photogrammetry and Remote Sensing* 167: 385-395. DOI: https://doi.org/10.1016/j.isprsjprs.2020.07.005 (PR; IF 7.319)
- **Michellier, C.**, Kervyn, M., Barette, F., Syavulisembo, A.M., Kimanuka, C., Kulimushi Mataboro, S., Hage, F., Wolff, E. & **Kervyn, F.** 2020. 'Evaluating population vulnerability to volcanic risk in a data scarcity context: The case of Goma city, Virunga volcanic province (DRC)'. *International Journal of Disaster Risk Reduction* 45: 101460. DOI: https://doi.org/10.1016/j.ijdrr.2019.101460 (PR; IF 2.896)
- **Michellier, C.**, Katoto, P.M., Dramaix, M., Nemery, B. & **Kervyn, F.** 2020. 'Respiratory health and eruptions of the Nyiragongo and Nyamulagira volcanoes in the Democratic Republic of Congo: a time-series analysis'. *Environmental Health* 19: 62. DOI: https://doi.org/10.1186/s12940-020-00615-9 (PR; IF 4.690)
- Michellier, C., Pigeon, P., Paillet, A., Trefon, T., Dewitte, O. & Kervyn, F. 2020. 'The challenging place of natural hazards in disaster risk reduction conceptual models: Insights from Central Africa and the European alps'. *International Journal of Disaster Risk Science* 11: 316-332. DOI: https://doi.org/10.1007/s13753-020-00273-y (PR; IF 2.048)
- Mees, F. 2020. *Minerals*. Series 'Collections of the RMCA'. Tervuren: RMCA with the support of Ph. De Moerloose, 141 p. (Also available in Dutch: *Mineralen*, and in French: *Minéraux*.) (PR)
- **Mees, F.** & Langohr, R. 2020. 'Undisturbed iron industry sites in the Sonian Forest, Belgium'. *Journal of Archaeological Science* 29: 102113. (PR)
- Morrison, A., Whittington, A., **Smets, B.**, Kervyn, M. & Sehlke, A. 2020. 'The Rheology of Crystallizing basaltic lavas from Nyiragongo and Nyamuragira volcanoes, DRC'. *Volcanica* 3 (1): 1-28. DOI: https://doi.org/10.30909/vol.03.01.0128 (PR)
- Nkodia, H.M.D.-V., Miyouna, T., **Delvaux, D.** & Boudzoumou, F. 2020. 'Flower structures in sandstones of the Paleozoic Inkisi Group (Brazzaville, Republic of Congo): evidence for two major strike-slip fault systems and geodynamic implications'. *South African Journal of Geology* 123(4): 531-550. DOI: https://doi.org/10.25131/sajg.123.0038 (PR; IF 0.948)
- Pérez-Garcia, A., **Mees, F.** & Smith, T. 2020. 'Shell anatomy of the African Paleocene bothremydid turtle Taphrosphys congolensis and systematic implications within Taphrosphyini'. *Historical Biology* 32(3): 376-385. (PR)
- Samsonov, S., **Dille, A.**, **Dewitte, O.**, **Kervyn, F.** & d'Oreye, N. 2020. 'Satellite interferometry for mapping surface deformation time series in one, two and three dimensions: A new method illustrated on a slow-moving landslide'. *Engineering Geology* 266: 105471. DOI: https://doi.org/10.1016/j.enggeo.2019.105471 (PR; IF 4.779)
- Steeman, T., De Weirdt, J., Smith, T., **De Putter, T., Mees, F.** & Louwye, S. 2020. 'Dinoflagellate cyst biostratigraphy and palaeoecology of the early Paleogene Landana reference section, Cabinda Province, Angola'. *Palynology* 44(2): 280-309. (PR)
- Van Ranst, E., Kips, P., Mbogoni, J., **Mees, F.**, Dumon, M. & Delvaux, B. 2020. 'Halloysite-smectite mixed-layered clay in fluvio-volcanic soils at the southern foot of Mount Kilimanjaro, Tanzania'. *Geoderma* 375: 114527. (PR)
- Jacobs, L., Kabaseke, C., Bwambala, B., Katutu, R., **Dewitte, O.**, Mertens, K., Maes, J. & Kervyn, M. 2019. 'The Geo-observer network: a proof of concept on participatory sensing of disasters in a remote setting'. *Science of the Total Environment* 670: 245-261. DOI: https://doi.org/10.1016/j. scitotenv.2019.03.177 (PR; IF 5.589)
- **Liégeois, J.-P.** 2019. 'A New Synthetic Geological Map of the Tuareg Shield: An Overview of Its Global Structure and Geological Evolution'. In: Bendaoud, A., Hamimi, Z., Hamoudi, M., Djemai, S., Zoheir, B. (ed.), *The Geology of the Arab World An Overview,* pp. 83-107. Series 'Springer Geology'. Springer Cham. DOI: https://doi.org/10.1007/978-3-319-96794-3_2 (PR)
- Maes, J., Mertens, K., Jacobs, L., Bwambale, B., **Dewitte, O.**, Poesen, J. & Kervyn, M. 2019. 'Social multi-criteria evaluation to identify appropriate disaster risk reduction measures: Application to landslides in the Rwenzori Mountains, Uganda'. *Landslides* 16: 1793-1807. DOI: https://doi.org/10.1007/s10346-018-1030-0 (PR; IF 4.252)
- Mambwe, P.M., Lavoie, S. & **Delvaux, D.** 2019. 'Soft sediment deformation structures in the Neoproterozoic Kansuki formation (Katanga Supergroup, Democratic Republic of Congo): Evidence for deposition in a tectonically active carbonate platform'. *Journal of African Earth Sciences* 150: 86-95. DOI: https://doi.org/10.1016/j.jafrearsci.2018.09.002 (PR; IF 1.532)

- Mees, F., Adriaens, R., Delgado-Huertas, A., Delvaux, D., Lahogue, P., Mpiana, C. & Tack, L. 2019. 'Palygorskite-bearing fracture fills in the Kinshasa area, DR Congo - an exceptional mode of palygorskite vein development'. South African Journal of Geology 122(2): 173-186. DOI: https://doi.org/10.25131/saig.122.0013 (PR; IF 0.6)
- **Moeyersons, J.**, Nyssen, J., Deckers, J., Haile, M. & Poesen, J. 2019. 'Geomorphic processes in Late-Pleistocene and Holocene environments'. In: Nyssen, J., Jacob, M., Frankl, A. (eds), *Geo-Trekking in Ethiopia's Tropical Mountains*. Series 'GeoGuide'. Springer, pp. 179-193. DOI: https://doi.org/10.1007/978-3-030-04955-3_12 (PR)
- **Moeyersons, J.**, Nyssen, J., Van den Eeckhaut, M., Haile, M., Deckers, J. & Poesen, J. 2019. 'Mass Movements and Argilliturbation in Dogu'a Tembien'. In: Nyssen, J., Jacob, M. & Frankl, A. (eds), *GeoTrekking in Ethiopia's Tropical Mountains*. Series 'GeoGuide'. Springer, pp. 303-317. DOI: https://doi.org/10.1007/978-3-030-04955-3_20 (PR)
- **Monsieurs, E., Dewitte, O.** & Demoulin, A. 2019. 'A susceptibility-based rainfall threshold approach for landslide occurrence'. *Natural Hazards and Earth System Sciences* 19 (4): 775-789. DOI: https://doi.org/10.5194/nhess-19-775-2019 (PR; IF 2.883)
- **Monsieurs, E., Dewitte, O.**, Depicker, A. & Demoulin, A. 2019. 'Towards a transferable antecedent rainfall susceptibility threshold approach for landsliding'. *Water* 11(11): 2202. DOI: https://doi.org/10.3390/w11112202 (PR; IF 2.524)
- Rademakers, F., **Nikis, N.**, **De Putter, T.** & Degryse, P. 2019. 'Provenancing Central African copper croisettes: a first chemical and lead isotope characterisation of currencies in Central and Southern Africa'. *Journal of Archaeological Science* 111: 105010. DOI: https://doi.org/10.1016/j.jas.2019.105010 (PR)
- Solé, F., Noiret, C., Desmares, D., Adnet, S., Taverne, L., **De Putter, T., Mees, F.**, Yans, J., Steeman, T., Louwye, S., Folie, A., Stevens, N.J., Gunnell, G.F., **Baudet, D.**, Kitambala Yaya, N. & Smith, T. 2019. 'Reassessment of historical sections from the Paleogene marine margin of the Congo Basin reveals an almost complete absence of Danian deposits'. *Geoscience Frontiers* 10(3): 1039-1063. DOI: https://doi.org/10.1016/j.gsf.2018.06.002 (PR)
- Steeman, T., Louwye, S., De Weirdt, J., **De Putter, T.**, Smith, T. & **Mees, F.** 2019. 'Dinoflagellate cyst biostratigraphy and palaeoecology of the early Paleogene Landana reference section, Cabinda Province, Angola'. *Palynology*: 1-30. DOI: https://doi.org/10.1080/01916122.2019.1575091 (PR)
- Tack, B., Phoba, M.-F., Van Puyvelde, S., Kalonji, L.M., Hardy, L., Barbé, B., van der Sande, M.A.B., **Monsieurs, E.**, Deborggraeve, S., Lunguya, O. & Jacobs, J. 2019. 'Salmonella Typhi From Blood Cultures in the Democratic Republic of the Congo: a 10-Year Surveillance'. Clinical Infectious Diseases 68: S130-S137. (PR; IF 9.055)
- Taverne, L., **De Putter, T.**, **Mees, F.** & Smith, T. 2019. 'Cabindachanos dartevellei gen. and sp. nov., a new chanid fish (Ostariophysi, Gonorynchiformes) from the marine Paleocene of Cabinda (Central Africa)'. Geologica Belgica 22: 1-6. DOI: https://doi.org/10.20341/gb.2018.011 (PR)
- Tilley, L.J., Berning, B., Erdei, B., Fassoulas, C., Kroh, A., Kvaček, J., Mergen, P., Michellier, C., Miller, C.G., Rasser, M., Schmitt, R. & Kovar-Eder, J. 2019. 'Hazards and disasters in the geological and geomorphological record: a key to understanding past and future hazards and disasters'. *Research Ideas and Outcomes* 5: e37087. DOI: https://doi.org/10.3897/rio.5.e34087 (PR)
- **Trefon, T.** 2019. 'Avant-propos'. In: de Saint Moulin, L., *La Place de la religion à Kinshasa et en RDC*. Series 'Cahiers africains' (no. 94). Paris/Tervuren: L'Harmattan/RMCA, pp. 7-8 pp. (PR)
- Utami, S.R., **Mees, F.**, Dumon, M., Qafuko, N.P.& Van Ranst, E. 2019. 'Charge fingerprint in relation to mineralogical composition of Quaternary volcanic ash along a climatic gradient on Java Island, Indonesia'. *Catena* 172: 547-557. (PR)
- Van Ranst, E., **Mees, F.**, De Grave, E., Ye, L., Cornelis, J.T. & Delvaux, B. 2019. 'Impact of andosolization on pedogenic Fe oxides in ferrallitic soils'. *Geoderma* 347: 244-251. (PR)
- Van Ranst, E., **Mees, F.**, Dumon, M., Ye, L., Delvaux, B. & Doube, M. 2019. 'Andosolization of ferrallitic soils in the Bambouto Mountains, West Cameroon'. *Geoderma* 340: 81-93. (PR)
- Walraevens, K., Van Camp, M., Vandecasteele, I., Clymans, W., **Moeyersons, J.**, Frankl, A., Guyassa, E., Zenebe, A., Poesen, J., Descheemaeker, K. & Nyssen, J. 2019. 'Hydrological Context of Water Scarcity and Storage on the Mountain Ridges in Dogu'a Tembien'. In: Nyssen, J., Jacob, M. & Frankl, A. (eds), *Geo-Trekking in Ethiopia's Tropical Mountains*. Series 'GeoGuide'. Springer, pp. 197-213. DOI: https://doi.org/10.1007/978-3-030-04955-3_13 (PR)

Non-peer-reviewed publications

Fernandez-Alonso, M., Baudet, D., Ntenge, A., Ngaruye, J-C., Kanyana, A., Tuyshime, P. & Habiyakare, T. 2020. Geological Map of Rwanda, 1/100.000 scale series, sheet KARONGI - S3/29 NW. Map Compiled in 2018-2019 and published in March 2020 in the frame of the project financed by Enabel: transfer of geo-data and knowledge in support of a Geo-IMS at RMB - a cooperation activity between the Rwanda mines, petroleum and gas board (RMB), Kigali, Rwanda and the Royal Museum for Central Africa (RMCA), Tervuren, Belgium. Series 'Geological Map of Rwanda, 1/100.000 scale'. Kigali: Rwanda Mines, Petroleum and Gas Board.

Karantanellis, E., Arav, R., **Dille, A.**, Lippl, S., Marsy, T. & Oude Elberink, S. 2020. 'Evaluating the quality of photogrammetric point-clouds in challenging geo-environments - A Case Study in an Alpine Valley'. *The International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences* 43: 1099-1105.

Mees, F. 2020. 'Een overzicht van de type mineralogie van Katanga'. Geonieuws 45: 206-218.

Others

/

Public-Oriented Services

Peer-reviewed publications

Verbergt, B. 2020. 'Transitioning the Museum: Managing Decolonization at the Royal Museum for Central Africa (2000-2020)'. *Journal of Cultural Management and Cultural Policy* 2: 141-169. DOI: https://doi.org/10.14361/zkmm-2020-0206 (PR)

Non-peer-reviewed publications

Verbergt, B. 2020. 'De weg naar de toekomst loopt langs het verleden'. *Uit het Erasmushuis/Alumni Letteren Leuven* 9: 15-18.

Verbergt, B. 2020. 'Hoe het AfricaMuseum omgaat met het beladen koloniaal verleden en met racisme'. In: Van Oost, O. (ed.), *Het agonistisch museum. Musea op zoek naar hun maatschappelijke rol. Reflecties van op het Groot Onderhoud, 26 november 2019*, pp. 22-25. *Antwerpen*. Brussels: FARO.

COLOPHON

Published under the supervision of the Communications and Publications services

Texts: Kristien Opstaele and Eline Sciot, based on the activity reports of the services and departments of the RMCA

Translation and revision: Emily Divinagracia, Clarisse

Buydens (RMCA) and Guy Shipton

Coordination: Eline Sciot and Isabelle Gérard (RMCA)

Layout: Friederike Kratky (RMCA)

Cover: Mapapu (Wings of fallen angels), a 2016 work by Freddy Tsimba, in the temporary exhibition Mabele eleki lola! The earth, brighter than paradise. Photo J-M. Vandyck © RMCA; artwork © F. Tsimba.

Printed on FSC paper at RMCA, Tervuren.

Responsible publisher: Guido Gryseels © Royal Museum for Central Africa, 2021 13, Leuvensesteenweg 3080 Tervuren (Belgium)

www.africamuseum.be Legal deposit: D/2021/0254/14 ISBN: 978-9-4926-6985-8

All reproduction and translation rights reserved for all countries. No part of this publication may be reproduced for purposes other than non-commercial educational use without prior written permission from the Publications Service, Royal Museum for Central Africa, 13 Leuvensesteenweg, 3080 Tervuren (Belgium).







