



L-Università ta' Malta
Faculty of Science

Department
of Biology

Department of Biology

Museum Newsletter

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Curator's Note

After a break of two months due to the Covid-19 pandemic, welcome back to readers of the Department of Biology Newsletter. Now that things are beginning to approach normality, I have ventured back to the museum to resume my work as Curator. I will be taking the opportunity of the summer break in order to do some housekeeping: a full stock-take of the Museum's collections and, where required, restoration of specimens such as superficial cleaning and topping up of preserving fluid. The latter is one of the most important tasks in museum maintenance and unfortunately, specimens have been lost in the past when the preserving fluid dries up due to faulty lid closure. Once this work is completed the Museum will be ready for the next Academic Year when, it is hoped, its resources will again be sought by students and academic staff.

News

On the occasion of World Environment Day (5th June) the world-renowned environmentalist Sir David Attenborough issued a surprisingly optimistic video¹ message in which he stated that "Suddenly, saving our planet is within reach. We have a plan. We know what to do."



Sir David Attenborough

The 94-year old went on to list what is needed in order to achieve this noble aim:

- Stop the damaging stuff
- Roll out the new green tech
- Stabilise the human population at the lowest level possible
- Keep hold of the natural wealth we currently hold

By "damaging stuff" Attenborough had in mind the anthropogenic activities and their side-effects which are posing a massive threat to the planet: industrial pollution, deforestation and other forms of habitat destruction, unsustainable exploitation of natural resources and climate change. Only by ensuring that these are managed sustainably can we stop, or at least limit considerably, the "damaging stuff". The "green tech" includes alternative energy generation, recycling of materials, reduction of persistent pollutants, notably plastics and innovative agricultural methodologies. The ever-growing human population is draining the planet's resources and making huge demands for energy utilization. There is little doubt that stabilization of the human population will make an important contribution to "saving our planet". The natural wealth we currently hold refers of course to the world's biodiversity and conservation of this biodiversity is another important factor in global preservation. This year's theme for World Environment Day was "Time for Nature". Biodiversity preservation has become even more pressing in the wake of the coronavirus epidemic. Covid-19 is one of a number of zoonotic diseases which jump the species barrier from animals to humans; they are an increasing threat as humanity pushes deeper into diverse ecosystems for natural resources.



Industrial pollution is still posing a threat to the planet

Sir David Attenborough is the public face of a landmark study by the British government into biodiversity loss and its economic impact, led by Cambridge economist Sir Partha Dasgupta; Its finding will be published ahead of the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP15). This meeting was originally scheduled to be held in China next October but has now been postponed due to Covid-19.

To conclude, a final Attenborough quotation:

"We now have a choice to create a planet that we can all be proud of, our planet. The perfect home for ourselves and the rest of life on Earth."

¹ The video message can be viewed at <https://www.independent.co.uk/environment/david-attenborough-world-environment-day-2020-climate-change-green-tech-a9551131.html>

Specimen of the month

The specimen I am featuring this month forms part of the marine mollusc collection (q.v.) donated by David Dandria to the Museum – *Sinistrofulgur sinistrum* (Hollister, 1958). I have selected this species because it is one of a small number of gastropod molluscs which exhibit a sinistral or left-handed shell. When such shells are held up with the spire uppermost, the aperture is on the left, while in dextral shells the aperture is on the right.

Right and left-handedness is referred to as chirality. Over 90% of gastropod shells are dextral while a small number are obligate sinistrals. A very small number of species have both dextral and sinistral shells. A 2005 review by Schilthuisen & Davison² on gastropod chirality investigated a number of issues associated with this phenomenon, including genetic and evolutionary studies.

Sinistrofulgur sinistrum is a large predatory gastropod in the family Buccinidae. The shell ranges in length from 130 – 400mm (the Museum specimen measures 140mm) and has a flattened spire and a long siphonal canal. There is a distinct shoulder where the spire meets the body whorl; knobs of small to moderate size are found at the shoulder. The base colour is usually pale marked with darker stripes along its long axis.

The Museum's specimen was purchased from a dealer and is therefore of unknown provenance. The natural geographical range of *S. sinistrum* comprises the Gulf of Mexico, the Caribbean Sea and the North Atlantic.



Sinistrofulgur sinistrum (sinistral) and
Hexaplex nigritus (dextral)

Reference Collections Marine Molluscs

In 2018 an extensive collection of marine mollusc shells was donated to the DoB Museum. The specimens comprising this collection were either collected directly by David Dandria in Mauritius (Indo-Pacific) and in Maltese waters, or else purchased from conchology dealers.

The collection consists of 90 specimens from the Classes Bivalvia, Cephalopoda and Gastropoda. 19 Families are represented. Of special interest are *Sinistrofulgur sinistrum* (the left-handed shell featured above), *Ophioglossolambis* (= *Lambis*) *violacea*, a rare strombid from the sea around Mauritius, the harp of David shell, *Harpa davidis* from the Indo-Pacific, the muricid *Bolinus* (= *Murex*) *brandaris* from the sea around Malta, the Mauritius cowry *Mauritia mauritiana* and the cone-shell *Conus geographicus*.

For a full listing of the collection please contact the curator on david.dandria@um.edu.mt.



An overall view of the mollusc collection



Ophioglossolambis violacea (Swainson, 1821)

² Schilthuisen M & Davison A. (2005) The convoluted evolution of snail chirality. *The Science of Nature* 92 (11) 504 – 515.



Harpa davidis Röding, 1798



Bolinus (=Murex) brandaris (Linnaeus, 1758)



Mauritia mauritiana Linnaeus, 1758



Conus geographicus Linnaeus, 1758

Quote of the month

I believe that new mathematical schemata, new systems of axioms, certainly new systems of mathematical structures will be suggested by the study of the living world.

Stan Ulam, *Adventures of a Mathematician* (1991)

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