PULSE

The LINNEAN SOCIETY of London

ISSN 1759-8036

ISSUE 35
AUGUST 2017

NEWS FROM THE LINNEAN SOCIETY OF LONDON – A FORUM FOR NATURAL HISTORY

MONSTERS AND MYTHS

The BSHS Engagement Fellowship Project

What do mythical creatures and the snack Monster Munch™ have in common, and how are these both key to understanding the work of Linnaeus? The Linnean Learning team set out to answer this question (and others) through hosting a British Society for the History of Science (BSHS) Engagement Fellowship Project this spring.

Launched in 2016, this new scheme from the BSHS was designed to support museums, galleries and libraries whose collections are relevant to the history of science, technology, engineering and medicine (STEM) through funding the placement of a Master's or PhD student to conduct research on a STEM topic and subsequently create novel public engagement media. In doing so, the Engagement Fellow would develop skills and experience in producing high quality research outputs that engage lay audiences with STEM history, whilst the host institution gains valuable research data and outreach content, but also the opportunity in training and mentoring the appointed student. Alongside the Bristol Museum and the Royal Pump Room Museum in Harrogate, the Linnean Society was successful

in its application to host a project, and appointed Verity Darke, a third year Literature and History of Science PhD student at the University of Reading, as our Engagement Fellow.

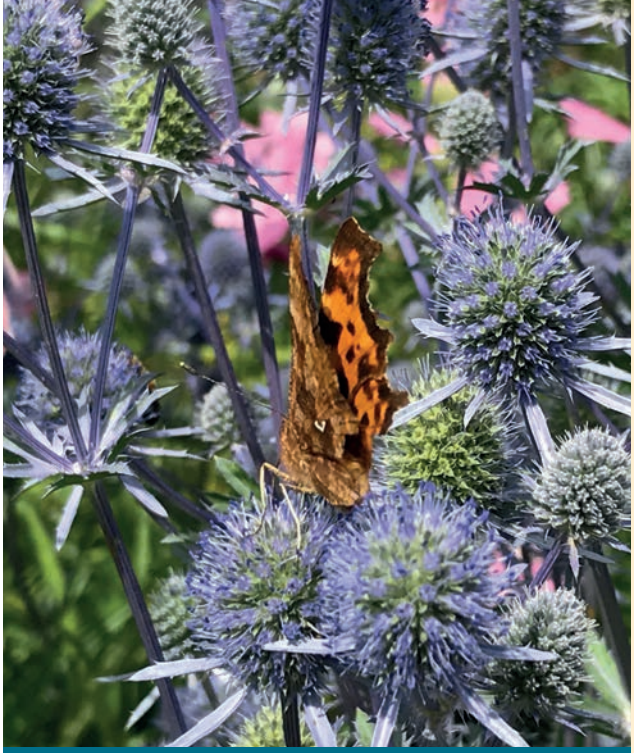
The first two weeks of Verity's project, *Unnatural Histories*, were spent scoping the Linnean Society's extensive library resources to develop the central theme of the project. Beginning with an overview of classification through the ages, the project tells the story of taxonomy by focussing on the library's medieval bestiaries/herbals; sizeable compendiums which feature monsters and animals alike. In analyzing representations of mythical beasts, such as dragons, hydras and mermaids, alongside Linnaeus's later, more evidentiary, approach to classification, Verity's project highlights how Linnaeus's *Systema naturae* went on to change not just the scientific, but also the public view of the natural world. Instead of drawing together textual sources and eye-witness accounts which 'verified' what would now be considered mythical beasts, Linnaeus adopted a systematic approach, and developed a common system within which scientists could more accurately communicate. Using the aptly titled Monster Munch™ as an example: the common 'belief' is that each corn snack represents a monster's footprint, but when reversed could they also be interpreted as a monster with a head, arms and legs? Before Linnaeus, there were fewer scientific systems or rules to prove or disprove beliefs. Linnaeus's system has helped naturalists eliminate assumption and make important taxonomic decisions that have seen non-verifiable creatures removed from canonical science and placed within the confines of cryptozoology.

Whilst we shall leave the final decision on the specific anatomy of Monster Munch™ up to a public vote, the main output of Verity's project, our *Unnatural Histories* exhibit, will initially be run on Saturday 16 September as part of the Linnean Society's Open House London event. Join us then to see in detail how Linnaeus handled mythical beasts whilst creating his system of binomial nomenclature! In addition, Verity and Rhys Grant's presentation at the BSHS Annual Conference, *Unnatural Histories: Linnean Learning, Collaboration and Outreach*, can be viewed on the Linnean Society YouTube channel at **https://www.youtube.com/user/LinneanSociety.**

Dr Rhys Grant (Education Officer) and Verity Darke (BSHS Engagement Fellow)

LEFT: Interpretation; Is Monster Munch™ just a monster's foot, or a whole monster when reversed?

BELOW LEFT: BSHS Engagement Fellow Verity Darke helps on the Society's stand at the Cambridge Science Festival © The Linnean Society of London



ABOVE: © Elizabeth Rollinson

Conversazione 2017

On 8 July over 40 Fellows and their guests gathered for the Society's annual Conversazione at the Oxford University Botanic Garden. Organised and led by the garden's Director and the Society's Scientific Secretary Professor Simon Hiscock FLS, the group visited the Danby Arch where Simon and Dr Stephen Harris, the Druce Curator of the Oxford University Herbaria, gave brief talks about the history of the garden. (As a side note, refurbishment of this area for public engagement will include 'wallpaper' designed by artist Pia Östlund—similar to that which decorated Linnaeus's study—and inspired by the paintings of botanist Johann Jacob Dillenius.)

Founded by Henry Danvers, 1st Earl of Danby in 1621, it is the oldest botanic garden in Great Britain. It is also one of the oldest scientific gardens in the world, having been initially established as a physic garden. The group toured the medicinal and taxonomic beds, as well as the glasshouses (the first of which was built over 300 years ago) which collectively hold over 1,200 different species. The garden's diverse collections are well worth a visit, with over 90% of the world's vascular plant species represented.

ABOVE: © Elizabeth Rollinson

Strong as a Box

The Society has many traditions, and some Fellows will be aware of the heavy 'Iron Chest' that over the years has housed the Charter and Bye-Laws (26 March 1802), Grant of Arms (13 December 1802), the Society's original seals, and medals and decorations given to both the Society and botanist Sir Joseph Dalton Hooker (1817–1911). Each year at the Anniversary Meeting the chest is unlocked and the contents are checked by the President, Treasurer, Executive Secretary and Librarian. But Glenn Benson, our Curator of Artefacts, has been doing some digging on the history of the strong box itself and has unearthed some intriguing details.

The cast iron chest was ordered by the Society's Council on 24 May 1802. It was to have three locks and keys to ensure total security; payment came eight years later in July 1810, for the princely sum of £8 18s 6d (just over £650 in today's money), to Messrs Larkins & Eadis.

Over 100 years later, in October 1917, war inadvertently forced an addition to the chest's contents. Five Policies of Insurance (in case of injury by aircraft) had been arranged for the staff of the Linnean Society, and the policies were now included in the strong box.

ABOVE:
The Society's and Joseph Dalton Hooker's medals on display for the Anniversary Meeting © The Linnean Society of London

LEFT:
Curator Glenn Benson displays the medals and decorations from the chest under Linnaeus's watchful eye
© The Linnean Society of London

With the First World War ongoing in March 1918, Treasurer Horace Woollaston Monckton pointed out that the Society's 'Securities' were listed in the Bye-Laws as being in the 'Iron Chest', whereas by that point they been moved to Lloyds Bank. Later, in 1928, several more 'Securities' (including the insurance policy for the staff) were transferred to Lloyds Bank for safe keeping: a policy relating to the ownership of the Hooker medals, the Fidelity Bond of the Clerk, and the Insurance of the Linnean Society's Collections. Whether these original documents still exist, now superseded by modern equivalents, remains to be seen.

LEFT:
The Society's iron chest was commissioned in 1802; Courtesy Glenn Benson

WONDER BAY
Seaweed on Display at the NHM

I can only compare these great aquatic forests … with the terrestrial ones in the intertropical regions. Yet if in any country a forest was destroyed, I do not believe nearly so many species of animals would perish as would here, from the destruction of the kelp.

Charles Darwin (1834) Tierra del Fuego, Chile

It is easy to ignore or take for granted what we cannot see. Kelp forests dominate shallow coastal waters in temperate regions around the world and are the largest biogenic structures in these ecosystems, but their distribution and abundance is changing due to rising sea-surface temperatures as a result of climate change. How do you draw attention to these magical, yet threatened habitats? This is the story of the seaweed wonder bay at Hintze Hall, Natural History Museum, London (NHM).

Kelps are some of the most productive organisms on the planet and their biodiversity rivals that of tropical rainforests. They are nurseries for fish, provide coastal protection, and are a source of food, alginates, pharmaceuticals and biofuels. Britain in particular is an important biogeographic zone for kelp. It supports up to 50% of species documented in the northeast Atlantic, and covers 19,000 km^2 of coastline, a habitat similar in area to British broadleaf forest. Britain also has a very rich and diverse algal flora with > 650 species of red, green and brown seaweeds, including five kelp species: *Laminaria digitata*, *L. hyperborea*, *L. ochroleuca*, *Saccorhiza polyschides* and *Saccharina latissima*. *Laminaria digitata* and *L. hyperborea* are the main forest-forming kelps. However, on the south-west coast of England, *L. hyperborea* is declining and *L. ochroleuca* is expanding its range.

To recreate a kelp forest in two dimensions was ambitious to say the least, but the new developments within Hintze Hall enabled this to be realised. Our vision was to give visitors a sense of wonder and scale of the remarkable underwater habitat that we have around our shores. In order to do this, kelps (and the red, green and brown seaweeds associated with them) were collected from shores in Pembrokeshire and from the subtidal zone with the help of divers and the Skomer Marine Reserve boat. Coordinating boats, divers, shore and camera crew accompanied by days of torrential rain added to the challenge, but the camaraderie made for great memories.

Mature kelp specimens can be up to 2 m tall, so we had to find a way to preserve these species when we normally work with specimens up to 30 cm high. Fortunately the museum carpentry team were able to construct huge wooden lattice plant presses that could accommodate these large unwieldy seaweeds. Normally, to make herbarium specimens, we press seaweeds onto paper and cover them with a non-stick fabric such as nylon gossamer. Most seaweed adheres well to paper but for the wonder bay we needed them to be free, so they were only pressed between sheets of gossamer. Manoeuvring presses, arranging huge wet seaweeds and changing the drying papers daily for at least two weeks was another challenge requiring two or more people working quickly—stressed kelps exude alginates and soon become revolting gloopy messes.

It was fascinating (and on occasion, traumatising) to see how such large specimens fared when they were dried. *Laminaria digitata*, for example, revealed a distinctive sickle-shaped outline and was easy to handle. *Saccorhiza polyschides*, on the other hand—an apparently robust species with a thuggish-looking holdfast—shrunk away, becoming flimsy and brittle. This was valuable knowledge for use in teaching.

The dried seaweeds were flown to the US to be taken to a specialist company in Salt Lake City. There, they were placed in Perspex panels between 3 m high sheets of glass, a process previously untested on such a large scale. We did not know if the seaweeds would survive the journey, or if they would be seized by customs. However, all was well and it was thrilling to see the first panel come out of the furnace. It has been a unique project; I express immense gratitude to Jo Wilbraham, senior curator of algae at the NHM for working with me throughout.

Kelp forests are integral components of marine ecosystems and support an immense variety of life. We hope that those who visit the display will not only be awestruck by these organisms but will be reminded of just how vital seaweeds are for the functioning of life on our planet. To find out more about the NHM's wonder bay, visit http://www.nhm.ac.uk/discover/window-into-world-of-seaweeds.html and http://www.nhm.ac.uk/discover/seaweeds-a-hidden-habitat-under-threat.html

Professor Juliet Brodie
Research Leader, Phycology
Natural History Museum, London

ABOVE LEFT:
Collecting specimens in Wales © Jo Wilbraham

ABOVE RIGHT:
Pressing seaweed specimens for display © Jo Wilbraham

LEFT:
The wonder bay at the NHM explores the hidden habitat of seaweeds; Courtesy Juliet Brodie

BELOW RIGHT:
Installing the new display in Hintze Hall; Courtesy Juliet Brodie

MISINTERPRETING THE WHALE

RIGHT:
Fig 1. Monstrous medieval monsters: whales were both monsters and marvels
© The Linnean Society of London

BELOW RIGHT:
Fig 2. "Three Beached Whales", a 1577 engraving by Dutch artist Jan Wierix, showing villagers fleeing from stranded sperm whales
Source: Wikimedia Commons

For much of our history, little distinction was made between sea monsters, whales and giant fish. In early representations (Fig 1), whales were frequently depicted with fish-like scales and fins, dangerously blowing water from their blow-holes. In fact, in medieval times, whales were both monsters and marvels. A freshly stranded whale could provide miraculous quantities of meat as well as bone and baleen from which tools could be fashioned. However, a large dead or dying whale must also have been a forbidding spectacle; a famous picture of a rare mass stranding of sperm whales on the Dutch coast in 1577 shows villagers running in panic from the stricken animals (Fig 2). Others were more appreciative of this bounty from the sea. For example, on the other side of the North Sea, some two centuries earlier in 1324, the British Monarchy passed a law that laid claim to whales, declaring them Fishes Royale.[1] Shortly afterwards the Scottish crown did the same.

Organised whaling started with locally-deployed rowing boats, progressed across the world through square-riggers and, later, diesel-driven catcher and factory vessels, leaving decimated whale populations in its wake. In the 20th century alone, nearly three million whales were killed, the best known example of over-exploitation of a living creature and, in terms of biomass, probably the greatest removal to date.[2] Through much of this carnage, we knew little about the biology of the whales, including what they looked like. A stranded whale is immediately distorted by being out of water and they decompose remarkably fast, their bodies bloating with decomposition gases. Meanwhile, out at sea, hunters and other observers could usually only view one part of the animals' bodies at a time. All this led to weird, wonderful and frightening depictions.

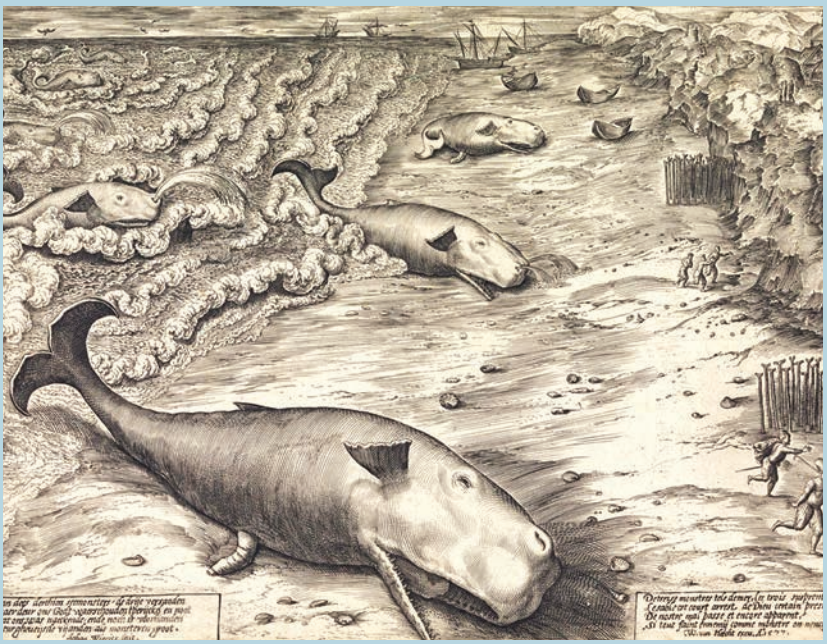
A Distorted Image

Our poor appreciation of whales came to matter economically because, by the 19th and 20th centuries, countries were in competition for the riches locked in their bodies. Early far-seas whalers would have been able to tell a very valuable sperm whale (with its huge square head full of spermaceti oil) from a right whale. However, as these whales declined and boats became fleeter, being able to tell other, less distinctive, whales apart became important, especially as nations established treaties to try to share them.

The distorted and monstrous images of whales in the first books on natural history (Fig 3), running through into images in popular Victorian tomes[3] may have also affected their readers in another way. If something is monstrous, it can be treated as a monster, arguably blunting any sympathy for the high death toll and hunting methods, which were (and still are) significantly cruel.

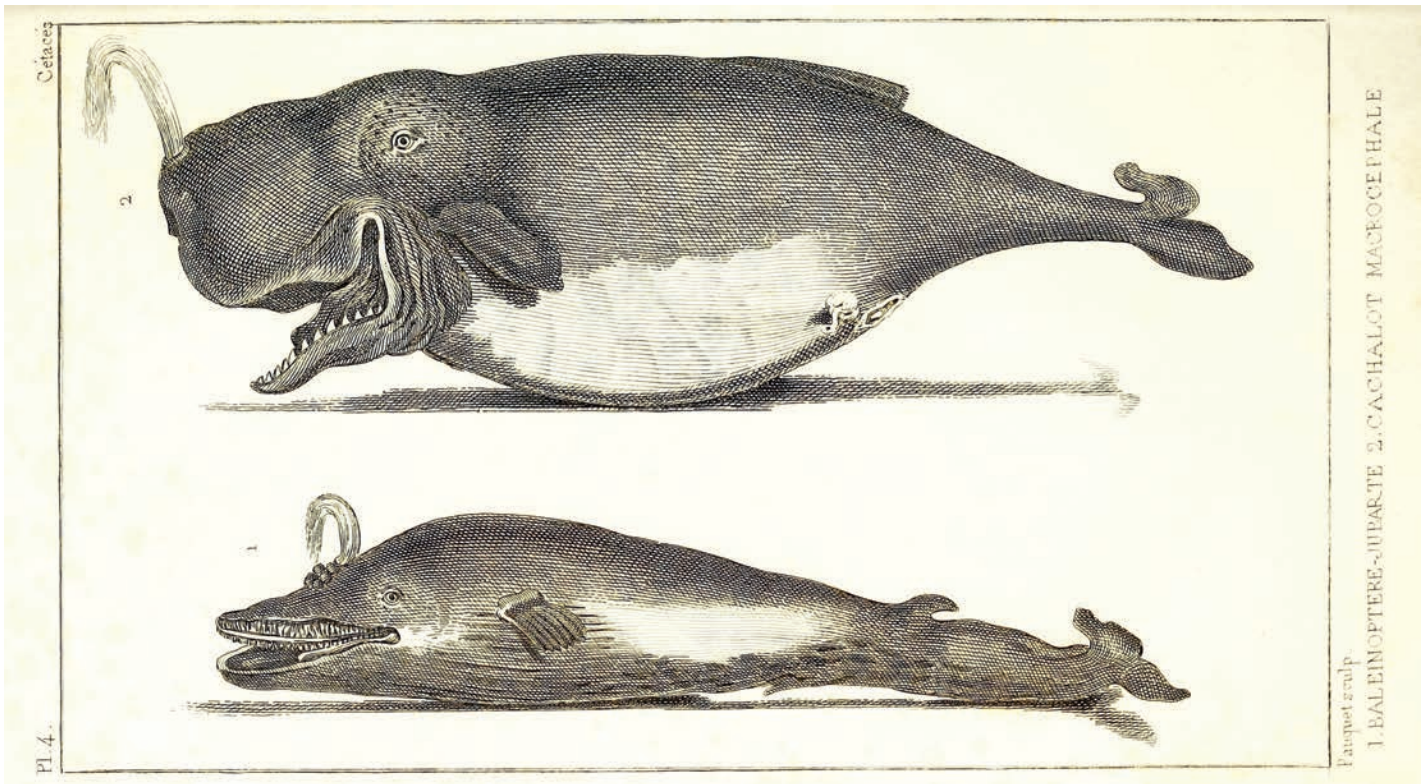
It was a whaling captain, Charles Scammon, who produced the first well researched and accurate images of whales in the late 1800s.[3] His images gradually helped to improve those seen by the general public in popular books. Much later, of course, the advent of underwater film would show the exquisite agile movements of whales in their own medium. Even more recently, researchers have started to recognise whales as individuals, to show how the social networks of these intelligent animals function and to establish that some have cultural sub-units in their populations showing unique specialisations.

Whilst I was preparing this article I came across an image of 'attacking whales' that was new to me and features one of those species with well-identified cultural sub-units. It was in a large volume sitting looking for a donation among other second-hand books in St Petrox's church in Dartmouth. The image is part of an account by the famous photographer, H. G. Ponting FRPS, who accompanied Captain Scott's ill-fated last voyage to the Antarctic.[4] It was 1911 and their vessel, the *Terra Nova*, had recently reached the Great Ice Barrier, and winter quarters were being built. Ponting ran out across the ice to try to photograph a group of orcas (or killer whales) spotted nearby. He writes:



Just as I reached the edge [of the ice], almost breathless from my rapid spurt, to my consternation the ice was suddenly heaved up under my feet and broken into fragments all about me, and the eight killer whales, lined up fin to fin, burst from under it and blew. The head of one was within two yards of me…. For a moment I was completely bewildered as I staggered on the reef of ice on which I was isolated but providentially the shock sent me backwards instead of into the sea, in which case my Antarctic experiences would have ended somewhat prematurely.

He goes on to describe how he believes the whale broke the yard-thick ice and then rocked the piece of ice that he was on so violently, that it was all he could do "to keep from being thrown into the sea" (Fig 4).



"Then", he adds, "the eight whales turned about and deliberately attacked me. The ship was not a hundred yards away, and Captain Scott and all my shipmates were watching transfixed with horror, for as they told me afterwards, they expected every moment to see me fall into the open jaws of one of the eight furies that were now pushing their heads out of the sea to endeavour to get me." In the end, Ponting and his precious reflex camera (that he would "not have lost for anything"), found their ice floe close to solid ice. He leapt to safety and reports looking back to see a "huge black and tawny head" rising out of the sea at the very spot from which he had leapt. The orca "rested on the ice-edge looking with little glistening eyes" and then "the great jaws opened wide" and Ponting saw the "terrible teeth that I had so narrowly escaped".

All very dramatic and rather compelling but now, with hindsight, we have cause to question the orcas' intent. In particular, we know that orcas are very conservative about their prey and different groups specialise in particular prey types. Some eat fish, others hunt marine mammals, and others will eat larger prey like sharks. They would have spy-hopped (raised their heads above the water) to get a better look at Ponting. It is highly probable that he was the first man that they had ever seen. They might even have, briefly, mistaken him for a seal, but now it seems highly unlikely that he was being actively hunted.

This more innocent interpretation of orca behaviour may feel counter-intuitive to the reader. However, as far as I know (and I have made some effort to check), a wild orca has never killed a human being and Erich Hoyt, an authority on this species, commented on this account that the whales would have immediately determined that Ponting was "neither seal nor meal" and emphasised that it is the "business of a predator to be curious", which is the most likely interpretation of their behaviour.[5]

Ponting survived the expedition and went on to lecture widely and display his wonderful photographs—a lasting tribute to Scott and his expedition. So, coincidentally, this dramatic account of marauding orcas would also have been widely promulgated, further perpetuating a monstrous view of whales. Such misinterpretations of whales and their behaviour in some ways continue to affect our conduct towards them today; we still have much to learn.

M. P. Simmonds OBE
Senior Marine Scientist, Humane Society international


Wolves of the Sea

ON THE EDGE OF DEATH: THE AUTHOR'S ADVENTURE WITH KILLER-WHALES

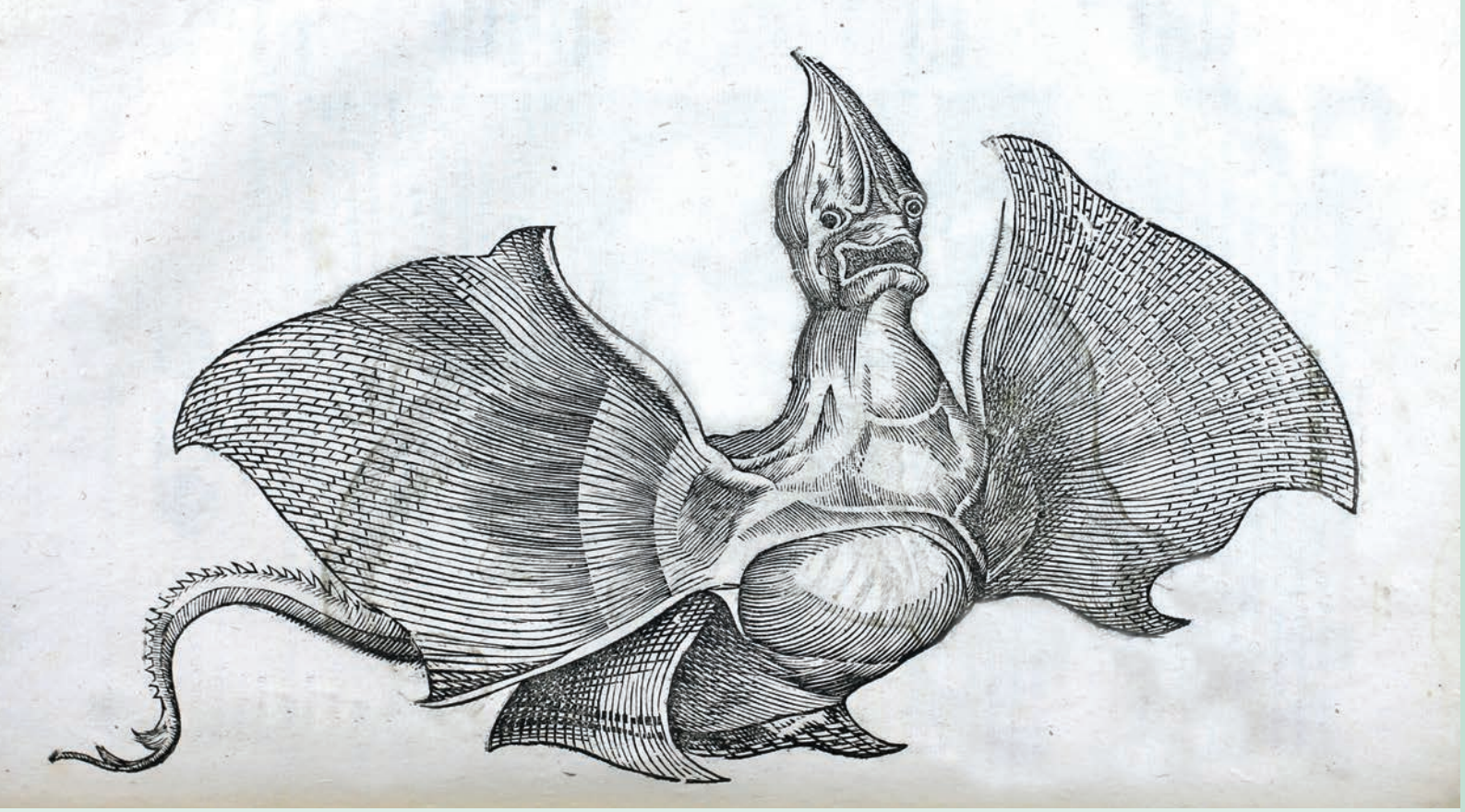
While accompanying the Antarctic expedition of Captain Scott the author of this chapter saw, when the ship had been moored off Ross Island where winter quarters were to be established, eight killer whales come to the surface near by. He snatched his camera and ran to the edge of the ice. But the whales burst through the three-foot thickness of ice, leaving the photographer standing on an unstable fragment. By a seeming miracle the piece on which he stood drifted within reach of the main floe just in time, as this drawing shows.

ABOVE:
Fig 3. LaCépède's 1804 illustration: a sperm whale and a rorqual whale – distorted, bloated and spouting water
Source: BHL

BELOW RIGHT:
Fig 4. H. G. Ponting being 'hunted' by orcas – an illustration of the incident
Source: M. P. Simmonds

References

1. Simmonds, M. P. 2011. The British and the Whales in: P. Brakes and M.P. Simmonds [eds], 2011. *Whales and Dolphins: Cognition, Culture, Conservation and Human Perceptions.* Earthscan. London and Washington DC.
2. Rocha Jr, R. C., Clapham, P. J. and Ivashchenko, Y. V. 2014. Emptying the Oceans: A Summary of Industrial Whaling Catches in the 20th Century. *Marine Fisheries Review* 76: 37–48.
3. Articles by Smith, T.D., and Reeves, R.R., and Simmonds, M.P. in A. C. Roque and A. J. Wright [eds]. 2013. From Nature to Science: Scientific illustration on marine mammals throughout the centuries–old challenges and new perspectives. *ECS Special Publication Series* 56: 23–55.
4. Ponting, H. G. 1912. The Wolves of the Sea. Chapter XLIII in J.A. Hammeton [ed]. *Wonders of Animal Life.* Volume 1. pp. 453–456.
5. Hoyt, E. 1998. *Orca–The Whale Called Killer.* Camden House Publishing.



UNNATURAL HISTORIES

Or, how Linnaeus vanquished monsters

With the benefit of hindsight we know that the study of natural history, prior to the taxonomic industry of Carl Linnaeus, was pretty different from the way we understand it today. Before Linnaeus's great works of classification, a common system through which scientific discoveries and ideas from the natural world could be discussed and exchanged had not yet been cemented. Nowhere is this more evident than the medieval bestiaries, volumes which described and illustrated various animals. Bestiaries did not focus solely on zoology, but incorporated information from a variety of sources, including mythology and the Bible, as well as revising the text of previous bestiaries. These tomes covered a wide range of creatures, from domestic animals that would have been well known to their writers (such as dogs and chickens), to exotic animals reported on by travelers (for example, the rhino), to animals that we now consider to be mythological (like the Hydra, a seven-headed monster slain by the Greek demi-God Hercules).

Bestiaries did not employ a standard system for grouping animals, sometimes organising them according to their habitat (land, sea or air), and sometimes alphabetically; mythical animals like the hydra, the dragon, and the unicorn, were placed alongside descriptions of fish, snakes and horses, seemingly verified by eyewitness testimony. Descriptions of 'sea sirens' or mermaids merged mythical descriptions drawn from sources as varied as Homer's *The Odyssey* and sailor's accounts of manatees, while specimens of horns that seemingly confirmed the existence of the unicorn (or 'Monoceros') were later proven to be narwhal horns. It's uncertain whether readers of these texts believed in the genuine existence of the mythical creatures they contained (certainly, some of the authors seem very dubious about the claims they repeat!) as bestiaries were designed to impart not just zoological but moral and religious messages. Nonetheless, bestiaries remained sources of zoological relevance for hundreds of years.

Nature remains true to itself

By the beginning of the 18th century, natural history had taken a more taxonomic turn. Classification was not yet standardised, however, and the recognition of plants and cross-referencing between books, and with other scientists, remained fraught. Though a system of classification had had its beginnings in the works of Caspar and Johann Bauhin (which went on to be heavily cited by Linnaeus), the first edition of Linnaeus's *Systema naturae* (1735) consistently practiced a standardised system of binomial naming for plants, introducing class, order, genus, and species, as well as simplifying identification by basing plant classification on the sexual organs of the flower. When Linnaeus started to prepare the tenth edition of *Systema naturae* (1758), he decided to apply the principles of binomial nomenclature to animals as well as plants. The *Systema* looks very different from the bestiaries: instead of descriptions and images, Linnaeus organised his subjects in a table. However, monsters—the 'Paradoxa'—do not really fit into Linnaeus's system of classification; his system represents a shift in the perception of monsters, from supernatural to scientific.

The hydra is a particularly good example of how Linnaeus's system changed understanding of the natural world. The hydra's starring turn in both Volume Four (snakes) and Volume Five (aquatic animals) of Swiss polymath Conrad Gesner's *Historiae animalium* (1551–55), depicts an image of a seven-headed 'sea devil' (some other bestiaries put the total number of heads at an even more startling nine). Despite the fact that Gesner himself sounds rather dubious about his correspondent's eye-witness testimony, the hydra remains included in his treatise. Linnaeus's approach to the hydra is markedly different from Gesner's: having heard of a supposed hydra specimen in Hamburg, Linnaeus arrived to study it and confirm its existence himself. Linnaeus's

ABOVE:
Rays were shaped and dried to look like 'dragons', or the much-feared Basilisk. These creatures were also known as 'Jenny Hanivers'

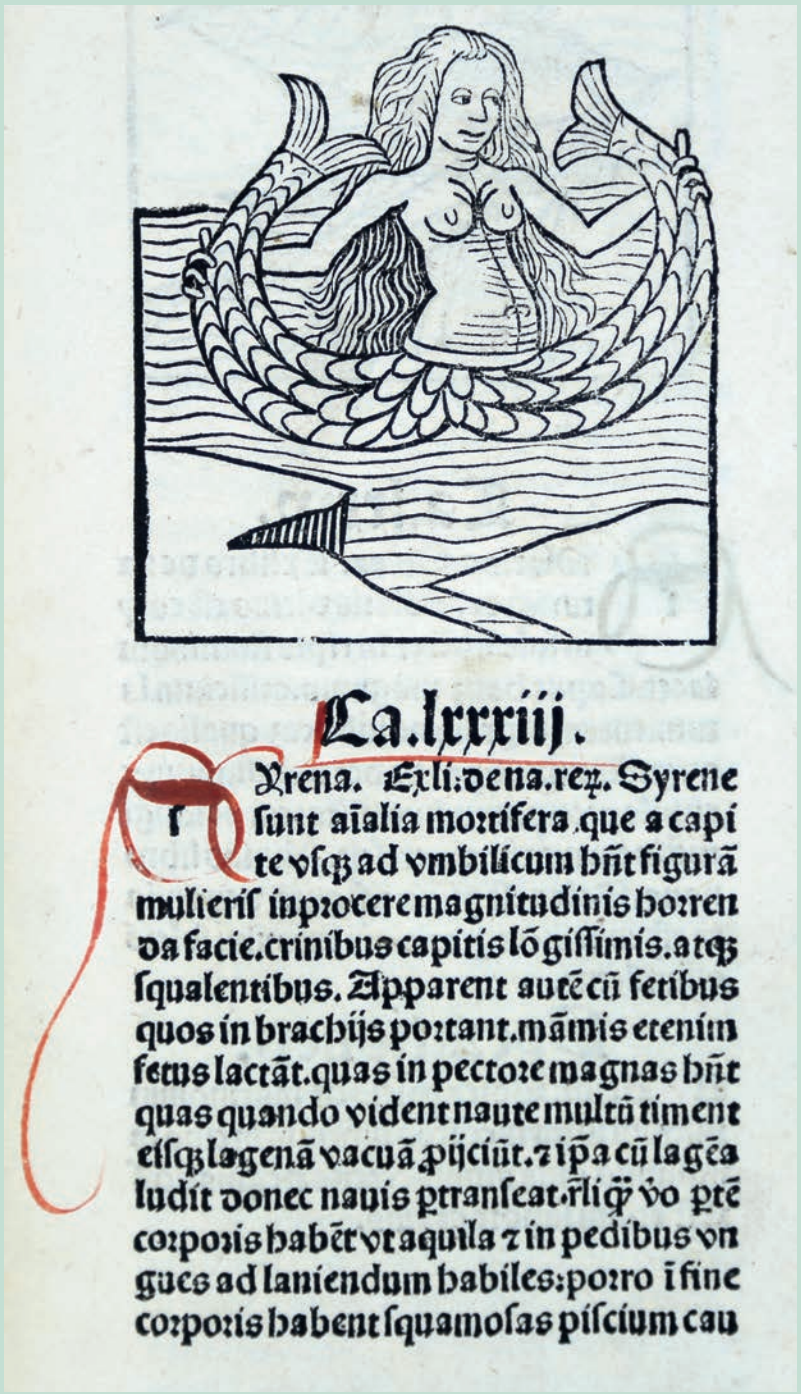
examinations revealed that the creature had been created by a skilled taxidermist, with the claws and teeth of the beast taken from large weasels, and stitched onto a body composed of mammal parts covered in a variety of snake skins.[1] Linnaeus decided that this hydra had been composed to serve as evidence of the upcoming apocalypse, a similar purpose to its religious and symbolic inclusion in bestiaries. Linnaeus's understanding of the difference between 'real' and 'mythological' beasts is mirrored in the entry for the hydra in the 'Paradoxa' category of the *Systema*:

The HYDRA, with eel-like body, two feet, seven necks and as many heads, without wings, is preserved in Hamburg, bearing similitude to ST. JOHN's Apocalyptic Hydra described in CHAPTERS XII and XIII. By most people it is considered quasi a real animal species but wrongly so. Nature, always remaining true to itself, has never in a natural way produced several heads on one body. As we ourselves have seen, the teeth of the carnivorous weasel which differ from the teeth of Amphibians, have easily revealed the fraud and artifice.[2]

Linnaeus's exposure of the hydra as a hoax is paralleled in other entries about 'Paradoxa'. Gesner's volume on snakes described many dragons, drawing on sources from classical civilisation to contemporary accounts, and is credited with being the first to taxonomise so-called flying serpents as 'dragons';[3] Linnaeus notes simply that the 'draco' supposedly had an eel-like body, two feet and two wings, but was usually a ray artificially shaped and dried to appear monstrous.

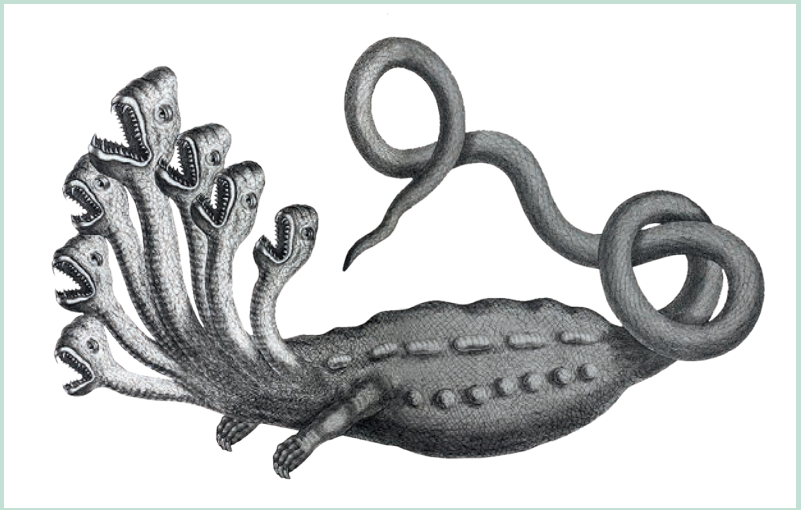
The contrast between the composite monsters of the bestiary and the taxonomic viewpoint exemplified by Linnaeus's *Systema* is demonstrated in the difference between their representations of mythical sea beasts. By creating a standardised system of classification, Linnaeus's work allowed more accurate discussion and provided a more reasoned argument with regard to the mythical nature of some species. Linnaeus's *Systema* heralded a move away from earlier accounts which sat natural history alongside history, religion and myth, to a methodology which relied on verifying facts through first hand observation. Through Linnaeus's work, our understanding of nature began to change, from one that incorporated the supernatural, to a world of species that could be neatly ordered, studied, and decoded by its subjects.

Verity Darke
University of Reading
British Society for the History of Science Engagement Fellow



La.lxxxiij.

Yrena. Exli:dena.rex. Syrene
ſunt aīalia mortifera que a capi
te vſq; ad vmbilicum hñt figurā
mulieris inprocere magnitudinis horren
da facie.crinibus capitis lō giſſimis.atq;
ſqualentibus. Apparent autē cū fetibus
quos in brachijs portant.māmis etenim
fems lactāt.quas in pectore magnas hñt
quas quando vident naute multū timent
eiſq; lagenā vacuā pīciūt.z ipa cū lagēa
ludit donec nauis ptranſeat.rliq; vo ptē
corporis habēt vt aquila z in pedibus vn
gues ad laniendum habiles:porro i fine
corporis habent ſquamoſas piſcium cau



ABOVE LEFT:
Mythical descriptions and sailor's accounts seemed to legitimise the existence of mermaids like this one from *Hortus sanitatis* (1491) © The Linnean Society of London

BELOW LEFT:
The Hamburg hydra – Linnaeus's examination of the specimen proved it was a fake
© The Linnean Society of London

[1]Asma, S. T. 2011. *On Monsters: An unnatural history of our worst fears.* Oxford: Oxford University Press (pp. 124–125).

[2]Linnaeus, C. 1735. 'The Paradoxa (Monster)', *Systema naturae*, trans. M. S. J. Engel-Ledeboer and Dr H. Engel (Nieuwkoop B. De Graaf, 2003), p. 28.

[3]Senter, P., Mattox, U. and Haddad, E. E. 2016. Snake to Monster: Conrad Gessner's Schlangenbuch and the evolution of the dragon in the literature of natural history. *Journal of Folklore Research* 53(6): 77.

Both of the Society's copies of the amazing medieval publication *Hortus sanitatis* are now up for adoption under our AdoptLINN conservation scheme. Read on to find out more **https://www.linnean.org/ortus-sanitatis**

FORTHCOMING EVENTS 2017

16 Sept **Special Event** **10.00–17.00**	**Open House London** The Society opens its doors as part of this city-wide event; special exhibition *Unnatural Histories*
28 Sept **Day Meeting** **10.30 start**	**British Society for Parasitology Autumn Symposium 2017** Organisers: *Prof Russell Stothard, Liverpool School of Tropical Medicine and Dr Bonnie Webster, Natural History Museum, London* **Registration is essential: www.bsp.uk.net/2016/10/04/bsp-autumn-symposium-2017**
4 October **Lunchtime Lecture** **12.30–13.00**	**Offas Dyke's Ancient Trees** Speaker: *Rob McBride* **Registration essential: www.linnean.org/events**
19 October **Evening Meeting** **18.00–19.00**	**The Most Perfect Thing: A Bird's Egg** Speaker: *Prof Tim Birkhead, University of Sheffield* **Registration essential: www.linnean.org/events**
1 November **Lunchtime Lecture** **12.30–13.00**	**What the Bat "Saw": Hunting Insects, Hiding from Bats and Dropping Seeds around the World** Speaker: *Dr Elizabeth Clare FLS, Queen Mary University of London* **Registration essential: www.linnean.org/events**
2 November **Partner Event** **18.00–19.00**	**Sir Julian Huxley Lecture 2017: Fungi in the Oceans Deep** Speaker: *Professor Thomas Richards, University of Exeter* *In association with The Systematics Association* **Registration essential: www.linnean.org/events**
16 November **Evening Meeting** **18.00–19.00**	**Annual Debate 2017: Big Data** Speakers: *Prof Christophe Dessimoz, Prof Kate Jones, Dr Nicholas Pound, Dr Vincent Smith;* Moderator: *Kathryn Ford* *In association with the London Evolutionary Research Network (LERN)* **Registration essential: www.linnean.org/events**
1 December **Evening Meeting** **18.00–19.00**	**FOUNDER'S DAY LECTURE: A Curious Performance: Maria Sibylla Merian and the Art of Natural History** Speaker: *Kate Heard, Royal Collection Trust* **Registration essential: www.linnean.org/events**

Please check our website for other events not listed here

Welcome Elisa Jones

© Leonie Berwick

John Lyon's Charity has generously awarded more funding for the BioMedia Meltdown competition, now in its third year, so the Society had to look for the perfect person to run it. That person turned out to be the fantastic Elisa Jones, who will be devising and running workshops in schools and youth centres in London, leading up to the final competition to be judged at the start of 2018.

Elisa was born and raised in rural mid-Wales where she developed an early love of learning, particularly due to her explorations of the wild Welsh countryside. This led to a degree in Natural Science and an MSc in Biophotonics. Realising that the thing she loved most about science was encouraging others to engage with it, she left the lab and ended up doing just that at the science centre Techniquest in Cardiff, followed by the Science Museum in London. Elisa then garnered a PGCE, spending several years in the classroom as a Science and R. E. teacher. In 2016 during a temporary move to the US, Elisa developed and delivered STEM workshops and worked on a variety of events for a local children's museum in rural Pennsylvania.

Elisa says: "I'm glad to be back in London, excited to be working as part of the Linnean Learning team and keen to start engaging the young people of North West London with biology, as part of the BioMedia Meltdown competition!"

We're keen to see what this year's entrants will submit under Elisa's guidance. To contact Elisa email **elisa@linnean.org.**

Welcome Helen Shaw

© Leonie Berwick

You will have read in the last issue of *PuLSe* that our Office Manager, Victoria Smith, moved on from the role in May. In July, the team welcomed our brilliant new team member, Helen Shaw, who has been getting to grips with looking after the Society's two sites with great aplomb.

Having relocated to Australia with her family, Helen completed a bachelor's of Environmental Science at Monash University in Melbourne. During this degree she was fortunate enough to be included in a Biology unit visiting Borneo, where she completed a sampling experiment on insects distributions though height gradients of the rainforest. A short time later she was also included in a Geography unit visiting South Africa, where she completed a field study on transboundary water resources. Alongside her studies, Helen worked as a temporary office assistant in multiple organisations around Melbourne. These roles varied greatly in experience and included responsibilities in event coordinating, human resources, and basic administration.

Helen was later able to take on a more permanent position at a timber imports company, where she worked as Compliance Officer and ensured the ethical nature of the timber the company was working with. In her two years in the company she was also able to complete a diploma in Work Health Safety, and implement successful wellbeing and sustainability programmes.

After deciding that warm weather and glorious beaches were overrated, Helen relocated back to the UK at the end of 2016. She is, in her own words, "greatly looking forward to aligning her experience with business processes and her passion for natural science". Join us in welcoming Helen to the team **helen.shaw@linnean.org**.

The LINNEAN SOCIETY of London

The Linnean Society of London
Burlington House, Piccadilly,
London W1J 0BF UK

T: +44 (0)20 7434 4479
E: leonie@linnean.org
W: www.linnean.org

Manufactured in the UK, using paper with a minimum 75% recycled content that is FSC accredited. Printed to ISO 14001 accreditation.

Charity Reference No. 220509

PULSE

All articles welcome – please submit news, reviews, events and articles in MS Word format to the Editor at leonie@linnean.org. Accompanying images must be a high resolution JPEG or TIFF with appropriate permission and copyright.