

Zevinaella volentis

by Kate Shalaeva, Life Science volunteer



New barnacle species, *Zevinaella volentis*, has a head with crustacean body inside and a muscular peduncle allowing the animal to catch food more effectively.

A new species is named after the volunteers and all who support them at the Natural History Museum

How was the discovery made?

Every year more than 15,000 new species of animals and plants are reported. Most of them found in less-explored habitats such as remote jungle forests or great marine depths. Yet, discovery of a new species on a museum shelf is quite a rare occasion so you imagine my excitement when a couple of years ago I came across unusual crustacean specimens stored in the museum's spirit collection. As a trained marine biologist and volunteer in the aquatic invertebrates collection for almost seven years, I recognised immediately the exciting potential behind finding a barnacle of a very peculiar and new appearance.

What is a barnacle?

Louis Agassiz, the famous naturalist, once described barnacles as "...nothing more than a little shrimp-like animal, standing on its head in a limestone house and kicking food into its mouth."

Anyone may spot the curious animals on the shallow seashore where they lead inconspicuous life encrusting rocks, piles or bottom of boats alongside with limpets and other shellfish. They possess unimpressive appearance of small whitish shells and doesn't move, often looking lifeless. This generates a common knowledge about barnacles as animals

related to molluscs. In fact, a barnacle is a unique crustacean with a soft body enclosed in a hard calcareous shell.

Pedunculate or goose barnacles, such as our new species, are raised on a scaly stalk attached to supporting objects. The new species, sizing about 1cm in length, lives in tropical waters of East Indies attached to sea lilies (Echinodermata) in the depth of 50 to 500m.

Virtually no ecological niche or climatic zone between the polar region and the tropics are barnacle-free. But these shelled creatures had remained the objects of uncertain nature until 1830 when John Vaughan Thompson found that their larvae have unmistakable "crustacean" appearance, being very similar to those of krill or copepods. Soon after, Darwin overhauled and sorted out the entire group of barnacles. The principles of the new classification reflected Darwin's ideas that the intriguing singularity of barnacles is the result of gradual changes throughout their evolution. He assumed that a sessile form originated from a freely swimming predecessor. The transformation had occurred gradually through a series of transitional stages up to the moment when barnacles finally cemented themselves permanently. Thus, the early ideas of evolution were born and bred on an inquiry into the nature of barnacles.



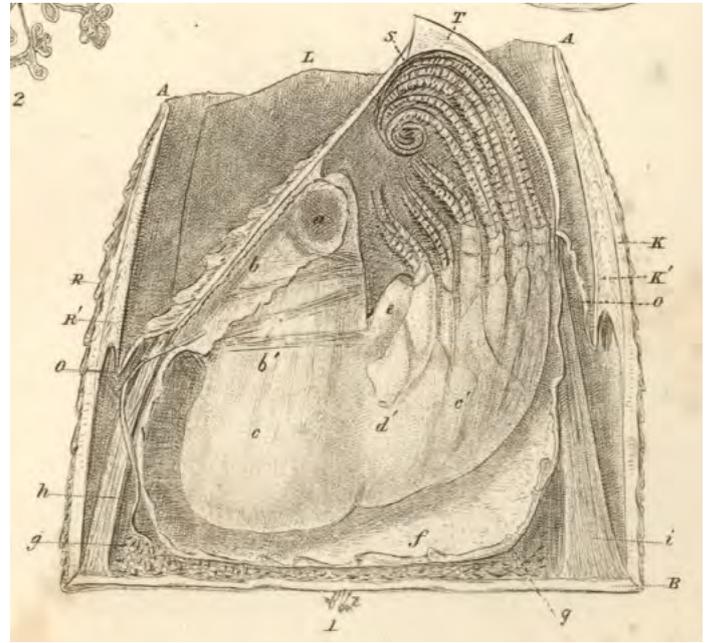
Barnacles on rocks on the sea-shore is a common sight. Photo by Kate Shalaeva

Barnacles have fuelled the most spectacular ideas about evolution of the natural world; still they seem to be enigmatic for someone who has no special qualification in biological science. These small animals have succeeded in occupying practically all niches in marine ecosystems, but are often passed by unnoticed in the field even by the most broad-minded naturalists. These beasts are notoriously difficult to study, yet stay on the cutting edge of modern biotechnology research, for example as a biomodel for monitoring of water pollution, source of new chemicals for dentistry and adhesives and, finally, as an emerging possibility to provide the easy-growing and tasty seafood. Barnacles show us that even the smallest and inconspicuous creatures are relevant to the future of the world.

How the new barnacle was studied and named?

When I realized that a challenging study is underway, I contacted my American colleague Professor William Newman from Scripps Institution of Oceanography for guidance and support. It took about two years of intense discussion, comparison with other species, meticulous drawings and photography to justify that the species is indeed new and that it should be separated as a new genus.

Professor Newman suggested naming the new genus *Zevinaella* in honor of Galina Zevina, Professor of Moscow State University (Russia), author of more than a hundred papers and books on barnacles as well as an inspirational teacher and warmhearted friend. After that I put forward the species name – *volentis*, meaning “willing, not obligatory” in Latin in honour of the volunteers and all who support them at the Natural History Museum – and thus make further discoveries happen!



Crustacean body inside the calcareous shell of barnacles as described by Charles Darwin in 1854. Original illustration from “A monograph on the sub-class Cirripedia, with figures of all the species”.

Finally, a report about *Zevinaella volentis* has now been published in *Zootaxa*, a peer-reviewed international journal for rapid publication of high quality papers on any aspect of modern systematic zoology. Everyone may now find plenty of information about the new barnacle on-line on mapress.com/j/zt/article/view/zootaxa.4072.2.1

Why it is important?

For me it's amazing that a discovery can happen within the Museum walls and that I can be a part of it. The excitement I experienced when I found and described the new barnacle is, I imagine, akin to the exhilaration of an explorer that finally sailed across to an unknown but longed-for land. I think that either being a part of an endeavoring expedition or a member of the museum's team equally means adventure, privilege and discovery.

Finally, this discovery and opportunity would not have been possible without the support of Geoff Boxshall (Merit Researcher, crustacean expert and my volunteer manager); Andrew Cabrinovic (Curator of Echinoderms) who is always happy to help locate material in the collection and provide information and consumables. Our thanks to Harry Taylor (Photographic Unit) who produced the excellent photographs of our new species.

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Audrey Lodder's lasting gift to the Museum

Earlier this year, we shared the sad news that fellow volunteer Audrey Lodder passed away in January. Many of us who had the pleasure to work with Audrey knew her as a sprightly character with an infectious smile, who loved interacting with visitors of all backgrounds.

Audrey led a distinguished career as a teacher, then headmistress, in inner-city schools, inspiring her students about the wonders of science and natural history. This passion for the natural world and educating others continued into her retirement, where she was a regular Learning Volunteer at the Museum for over 10 years.

Audrey decided that she wanted to help the Museum's work in the future by remembering our vital work with a gift in her Will. We are so grateful to Audrey both for all her time spent as a Learning Volunteer and for this generous gift, which will help us to continue enthusing our visitors about our natural world, and share how they can help protect our planet for future generations.

If you would like find out more about how you can remember the Museum's work with a gift in your Will, or if you would like to attend our next legacy event, please contact Carla Dormer, Legacy Manager on 020 7942 6044 or via email c.dormer@nhm.ac.uk



Highlights from the



LONDON VOLUNTEERS IN MUSEUMS AWARDS 2016

Tuesday 6 September saw an evening of celebration and grandeur at the Museum of London for volunteers and volunteering across the Heritage sector in London. Congratulations to all awardees and nominators.

We celebrated two Highly Commended awardees:

- Mary Spencer Jones for Managing, Supporting and Encouraging others (nominated by the V Factor Volunteer Leader Team)
- Rachel Clark, Life Science volunteer for Going the Extra Mile (nominated by Jan Beccaloni)

And one runner up:

- Giuseppe Signorino, Life Science Volunteer for Developing in a Role (nominated by Ana Araujo)

About the organisers:

The LHVMN exists to promote peer support and awareness of best practice in volunteer management within the London Heritage sector.

Follow the team on twitter @LHVMN1.

Dates for your diary

Science Uncovered Returns

Friday 30 September, 16.00–22.30
South Kensington and Tring

Science Uncovered is a unique event for visitors to interact with the latest scientific research and experience the Museum in a festival atmosphere. The format of the evening is fun, informal and relaxed with over 350 scientists and visiting experts coming together in a fabulous show of displays, tours, experiments, challenges, discussions and more.

The event will run at the main site in South Kensington and at Tring.

www.nhm.ac.uk/visit-us/whats-on/after-hours/science-uncovered/index.html

Diagnosis Volunteer!

Be a part of this exciting event: Staff and volunteers are invited to volunteer and help support Science Uncovered – we hope you can get involved! Full details and a quick survey to choose your role on the night will be sent out to you soon.

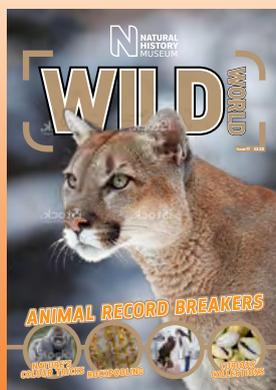
Volunteers Tea Party

12 October, 15.45–17.00
Darwin Centre Common Room

Come, eat biscuits and cakes, drink tea and be merry! No need to RSVP please just turn up! Please invite your manager along too and bring a mug if you have one.

Publications

The new issues of **evolve**, **WILD WORLD** and **Waterhouse Times** are out now. Copies can be found outside the staff restaurant. Please help yourself.



Contact

For more information on anything in this newsletter, please contact Ali Thomas, Museum Volunteer Engagement Manager at a.thomas@nhm.ac.uk or on **020 7942 6048**.