

## **Summary Write Up of the DGAG Talk Tuesday 18 Nov 2025**

**Title:** Darwin's "beloved barnacles"; solving evolutionary problems with fossils

**Speaker:** Andy Gale (Emeritus Professor, University of Portsmouth)

The talk was attended by an audience of 21 attendees. Unfortunately, it is not possible to reproduce exactly the presentation without the author to explain the slides and their context. However, the speaker has kindly offered a PDF of his slides that will be added in due course onto the DGAG website to assist in education and future reference. Below is my (Editor) initial draft summary from some rapidly scribbled highlights, hopefully to whet appetites for another volunteer to continue studying these fascinating creatures. However, for those wishing a further "deep dive" into the subject the additional references/links below are a good start (Editor) and or contact the speaker directly.

### **Talk Summary**

The speaker treated the audience to a wonderful, eye-opening review of barnacles. Who knew that us humans are lucky enough to share the planet with the "age of barnacles"! Well, that was the opinion of Darwin and given the exploding diversity of modern-day barnacles it seems plausible!

- Evocative descriptions of barnacle by early workers are both informative and entertaining e.g. Louis Agassiz ".....standing on their heads and kicking food into their mouths"
- Earliest recorded (Silurian age) barnacles were phosphatic but were replaced rapidly by low magnesium calcite (so more stable as fossils) forms and dominate modern-day species.
- Darwin was brilliant at observation and description and produced 4 books 1851-1854 with hand painted lithographs. He started the nomenclature and anatomy classification still used today.
- Andy Gale (1 of about 4 worldwide experts) has produced 2 new monograph volumes with the 3<sup>rd</sup> due early next year. He is open to requests for this material should anyone want to study barnacles. Andy recommends the "superb Steve Etches collection of fossil barnacles" some of which are preserved in life position - Late Jurassic (Kimmeridgian) age. The barnacle collection forms a "missing link" between the earlier low diversity barnacles and the later ones.
- Studies of the form of barnacles through the fossils and modern-day DNA studies have led to much revision and better understanding of the barnacle adaptation and evolution but still much work to do.
- There have been few barnacle fossils found to date in Permian and Triassic age strata. However, it could be that they have been overlooked due to the more popular microfossil sample preparation splits and screening techniques.
- Andy prefers to screen all size rock chips for the disarticulated barnacle plates not just the "Ostracod and Foraminifera size" domain splits. Andy recommends for the Chalk rock samples a soak in with 95% Acetic acid followed by dousing in boiling water to break apart gently the fabric and reveal entire calcite fossils.
- The last 20 million years has seen an explosion of barnacle diversity, in particular the "Acorn" types
- There are many barnacle species/groups that adapt and continue to adapt to various habitats, those that:
  - cling to rocks in the surf zone (Gooseneck – can be tasty, Spanish and Portuguese coastal folk have long history of harvesting them)
  - cling to floating objects; Logs, Ships, Whales, Turtles, Ammonites. (I (Ed) want to find those attached to fossil marine reptiles! i.e. there are some loose barnacle plates in samples from adjacent to reptiles at Etches Collection). Andy showed a good example of how the fossil barnacles found in life position on a fossil ammonite enables an interpretation to be made that the ammonite lived its life moving with its aperture forward! This is opposite to that one would intuitively assume from ammonite shape and comparison to living nautilus.

- parasitize on other organisms (particularly alien when they take over the host! An example of a crab was shown)
- form frameworks for coral and monospecific selection (Pyrogoma)
- live amongst the seaweed holdfasts (Lovely named Verruca barnacles are about 5mm long)

The presentation was followed by many questions to take us well over the hour.

Next DGAG talk is scheduled for Tuesday 09<sup>th</sup> December, speaker Hady George: How the famous fish beds of Lebanon have informed on life and evolution in the Cretaceous – more details in the events section of DGAG website.

More speakers are required for talk slots in Jan, Feb, Apr 2026, any topic loosely connected to the Earth (even Solar System!) and science will be considered, we like variety! Please check all your contacts and networks for a speaker and let me know contact details.

Chris Webb

*DGAG Events – Editor*

*email: [events@dorsetgeologistsassociation.org](mailto:events@dorsetgeologistsassociation.org)*

### **Additional Links**

1. Link to an interesting barnacle paper from 2023 ; one of many references  
[https://www.researchgate.net/publication/374613025\\_Mr\\_Darwin%27s\\_Beloved\\_Barnacles\\_Using\\_Cirripedes\\_to\\_Understand\\_Evolution\\_in\\_Origin\\_of\\_Species](https://www.researchgate.net/publication/374613025_Mr_Darwin%27s_Beloved_Barnacles_Using_Cirripedes_to_Understand_Evolution_in_Origin_of_Species)