
Summary Write Up of the DGAG Talk Tuesday 21 Oct 2025

From Tethys to the Himalaya — Fossil Fishes Witnessed the Qinghai-Tibetan Plateau's

Dramatic Transformation: Speaker: Gengyu Fang; PhD Student in Palaeobiology

University of Bristol; Natural History Museum, London

The talk was attended by an audience of 17 attendees: a tribute, perhaps, to some of the highest fossil localities in the world! 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 allowed us a subset of his slides as a PDF that is on the DGAG website to assist in education and future reference. Below is my (Editor) summary from some rapidly scribbled notes, hopefully to whet appetites for future work on this fascinating area. However, for those wishing a further “deep dive” into the subject the additional references/links below are a good start (Editor).

Talk Summary

The speaker kept the audience engaged with detailed slides, helped by occasional humorous anecdotes and small video clips of high elevation camps and fossil excavation examples. The audience gasped at the effort by the speaker and his colleagues to collect some spectacular fossils on the “roof” of the world. Some of the highlights (Ed.) were as follows:

- the collision zone formed as a result of the collision of the India plate with Asia to form the Tibet plateau is far more complex than originally thought with multiple geological terranes accreted and elevated over millions of years to influence evolution and dispersion of various creatures (e.g. fish and mammals) - the hypothesis of “evolution through ascent” (See references for more)
- Triassic age: locality near Mt Everest (Qololangma) and incredibly “weird” extinct marine fossil fish/shark *Helicoprion* with its “chain saw” like lower jaw
- Paleogene age: locality with the “climbing perch” rather exotically named *Eoanabus thibetana* that seems to show the plateau was much lower elevation in the Oligocene than present day
- Miocene age Qaidam Basin – despite the mosquitos hindering fossil hunting, enormous (2-3m long) toothed fish fossils, were found.
- Pliocene – Yardang salt desert today but during the Pliocene there were saline lakes with fish that evolved thickened bones (Hyperossification – a non-pathological bone Hypertrophy/ (Hyperostosis – overgrowth of existing skeleton)) interpreted likely to aid buoyancy control like some of the fossil reptile skeletons seen in earlier periods.

The 45-minute presentation was followed by questions to take us over the hour. We wished good luck to Gengyu in the completion of his PhD and future fossil hunting, although perhaps not fossil localities above 6000m elevation anymore!

Next DGAG talk is scheduled for Tuesday 18th November, speaker Professor Andy Gale: Title: Darwin's "beloved barnacles"; solving evolutionary problems with fossils – more details and full title in the events section of DGAG website.

More speakers are required for talk slots in early 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

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Additional Links

1. Helicoprion “buzz saw sharks?” of the Triassic age. A good entertaining 3D model can be viewed at the website of the Australian Museum plus further references.
<https://australian.museum/learn/animals/fishes/helicoprion/>
2. Spicer et al. 2020. The topographic evolution of the Tibetan Region as revealed by palaeontology. *Palaeobiodiversity and Palaeoenvironments* <https://doi.org/10.1007/s12549-020-00452-1>
https://www.researchgate.net/publication/346420083_The_topographic_evolution_of_the_Tibetan_Region_as_revealed_by_palaeontology
3. Ding, L., Kapp, P., Cai, F. et al. Timing and mechanisms of Tibetan Plateau uplift. *Nat Rev Earth Environ* 3, 652–667 (2022). <https://doi.org/10.1038/s43017-022-00318-4>
<https://www.nature.com/articles/s43017-022-00318-4>
4. Tseng et al. 2021. Qurlignoria (Mammalia: Bovidae) fossils from Qaidam Basin, Tibetan Plateau and deep time endemism of the Tibetan antelope lineage. *Zoological Journal of the Linnean Society*, 2022, XX, 1–23.
https://escholarship.org/content/qt4vc6f7hf/qt4vc6f7hf_noSplash_dd07450008745c936579f1c8ad87381a.pdf
5. Wu et al. 2017. Fossil climbing perch and associated plant megafossils indicate a warm and wet central Tibet during the late Oligocene. *Scientific Reports* | 7: 878 | DOI:10.1038/s41598-017-00928-9. https://www.researchgate.net/figure/A-new-fossil-climbing-perch-Eoanabas-thibetana-gen-et-sp-nov-from-the-upper-Oligocene_fig3_316090334

Photo

Gengyu Fang start of presentation to DGAG

