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Coring for Ithaca

Adler deWind reports from the Greek island of Kefalonia on progress towards proving - or disproving - the theory that the Paliki Peninsula was once separated from the main island and was the true geographical location of Homer's Ithaca.

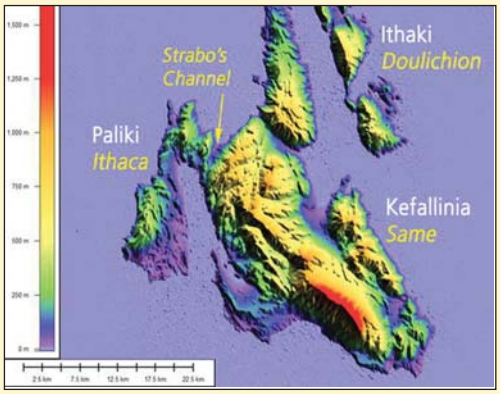

Fig.1: Digital Elevation Model (DEM) of Kefalonia showing the location of the Paliki peninsula and the Thinia Valley in which the boreholes are located. The yellow subscript gives the probable names of the respective islands if a marine seaway (originally described by Strabo) existed in Thinia 3000 years ago.

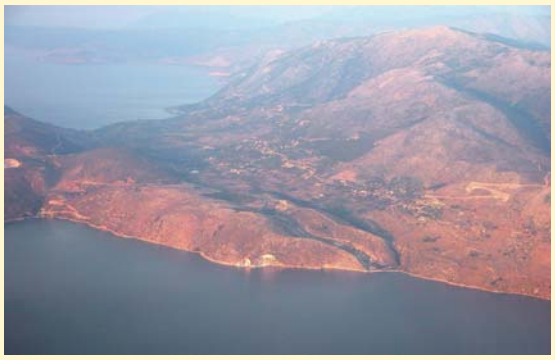

Fig.2: Oblique aerial shot of the Thinia valley, beneath which the marine channel separating Paliki from the rest of Kefalonia is believed to be buried. The valley is 6km long, up to 2km wide and rises to an elevation of c.180m at its saddle.

Fig.3: View south towards the Gulf of Livadi. The Livadi marsh (foreground) was the site of the first borehole sites and obtained over 80m of cores through the Holocene bay-fill sediments.

Despite a clear reference in Homer to "rocky Ithaca" being the westernmost, low-lying Ionian Island, controversy has long surrounded the location of Odysseus's Homeland[1,2].

Three years after their initial support of the geoscientific investigation and work program into testing whether the western peninsula of Kefalonia (Paliki) could have been that free-standing island three millennia ago (Fig.1), geotechnical company Fugro are continuing their support of the project by drilling and coring boreholes in 15 locations. If successful, the coring program has the potential to settle the centuries-old classical Greek dispute[3,4].

While the selected borehole sites focus upon rockfall deposits in key areas in the Thinia Valley (Fig.2) through which the proposed ancient marine channel would have run, the locations also include others at Atheras Bay and Livadi marsh (Fig.3). The latter will sample estuarine bay-fill sediments and thus provide valuable new insights and understanding of the role that tectonics and climate had in modifying the effects of Holocene transgression in the most active part of the Hellenic arc-trench system.

Sedimentary cores are being acquired by Fugro Géotechnique, the company's French affiliate, using a newly purchased Ecoforce CE-603 drilling rig (Fig.4). The rig was transported to Kefalonia on a 26-tonne truck and started its 85-day drilling campaign in September. The coring program is expected to run until mid January 2011. The drill sites have been selected by Prof John Underhill (University of Edinburgh), who is orchestrating the suite of geological, geophysical and geomorphic methods being deployed to test the theory in collaboration with Fugro Aperio. The program is being undertaken with permission and support of the Greek geological authorities (IGME), local political support from the municipal authorities and mayors of Argostoli and Lixouri, as well as the island's Archaeological Ephorate of Prehistoric and Classical Antiquities and local landowners.

Fig.4: Fugro's drilling rig on location at the southern Livadi Marsh, early October 2010.

Fig. 5: Holocene estuarine bay-fill mudstone cores from one of the Livadi Marsh boreholes. Core boxes are 1m long.

Of the 15 sites, 13 will be continuously cored (Fig.5) and in total the project expects to collect around a kilometre of sediment. Those cores will be shipped to Fugro Robertson's dedicated core facility in North Wales, where they will be logged, sampled and analysed to reconstruct the depositional history and dated using biostratigraphy and radiocarbon methods.

As well as land coring, there is contingency for a marine coring campaign to supplement the onshore studies. If initial results of the land boreholes are encouraging, the project will use expertise from another Fugro affiliate, namely Falmouth-based Fugro Seacore. This company will provide a self-propelled barge to drill and core beneath the Gulf of Livadi and enable important calibration of the sediments detected by the project's 2007 seismic reflection survey3.

All being well, results of the new analyses should be available in late 2011, when it will become clearer whether the uncertainty concerning the site of ancient Ithaca has finally been laid to rest.

References

1. Bittlestone et al., 2005. *Odysseus Unbound: The Search for Homer's Ithaca*. Cambridge University Press. 618 pages, 340 colour illustrations. ISBN: 0521853575
2. Underhill, J.R. 2006. *Quest for Ithaca*. Geoscientist 16 (9), 4-29.
3. Underhill, J.R. 2008. *Testing Classical Enigmas*. Geoscientist, 18 (9), 20-27
4. Underhill, J.R. 2009. *Relocating Odysseus' Homeland*. Nature Geoscience, 2, 455-458

EDUCATION NEWS

School year!

Over the past year the Society's educational programmes have expanded hugely, with offerings for all ages, from our Primary School programme to life-long learning initiatives. Sarah Day reports.

Primary-age children are fascinated by the world we live in. By supporting *Rockwatch*, the club for young geologists, GSL encourages families to get involved with geology. We have also developed our own 'Rocks and Fossils' workshops, which over the past year has introduced over 400 primary age children to geology, with hands-on activities.

These workshops were launched as part of '*Darwin in London*' – a project that brought together the various societies and organisations with which Charles Darwin was associated in London, and which was delivered to Westminster primary schools. The GSL even opened its doors to welcome classes of wide-eyed children (and staff!) to Burlington House. After a positive reception, it moved north to the Orkney Science Festival (see p.8), where over 200 children had the chance to take part. We also participated in the family day at Orkney, where children and families were able to find out more about geology and share their perspectives on landscape and history. As our education programme expands, we continue to work with Primary schools throughout the UK, offering teachers support and material to underpin their curriculum work.

Call in the SAS

Our outreach activities for older children have also gathered momentum this year with the introduction of the Schools Affiliate Scheme (SAS). This has enabled GSL to stay in touch with schools via bi-monthly newsletters, copies of *Geoscientist*, and news of events planned for next year. This has been very well received by schools teaching geology, and the programme will now be expanded to include schools who do not currently offer geology A level.

At the 2010 *Big Bang* festival, The GSL proudly celebrated A level student Tom Hearing's award as Young Scientist of the Year, for his project on the *Erosion of the Ammonite Pavements of Monmouth Beach*. Tom is currently a Junior Candidate Fellow of the GSL and we wish him every success for the future.

Thanks to help from BP, GSL ran its first *Geoscience Education Academy* (GEA) in August, with the aim of providing support to teachers without a background in the subject who nevertheless cover geology in schools,. The Academy was a great success and enabled us to work with over 20 secondary school science teachers to develop ways of incorporating geoscience into their lessons – and pass their knowledge on to others. The next GEA will take place in August 2011.

The *Friends of the Geological Society* scheme was launched in 2009 in response to the enthusiasm of interested amateurs attracted to the Society through our Shell Lecture series. There are now around 90 Friends, and after a successful evening event in July a second 'Friends only' evening is being planned for December. Friends receive a range of other benefits, including *Geoscientist*, a discount on the Special Publication book series, and a newsletter. Continued growth is expected in 2011!

The Friends scheme forms part of the Society's 'Lifelong Learning' activities, which will be targeted for development in the coming year. The operating and branding of the existing Endorsed Courses scheme will be reviewed and improved, and we hope that Friends will welcome the addition of a set of 'short courses' on a range of subjects. The emphasis on what we offer the geological enthusiast will be maintained, with the addition of extended information on Shell Lecture topics, delivered via the website.