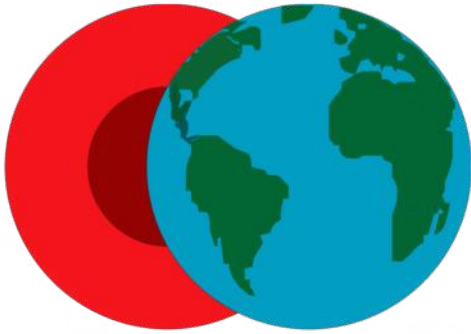


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Volume 5 Issue 2

December 2013

Earth Science Teachers' Association

www.esta-uk.net

Registered Charity No. 1005331

Newsletter Editor: Maggie Williams

ESTA COUNCIL 2013

contact@esta-uk.net

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Ring of Brogdar

ESTA News 5.2 features images taken by Hazel Clark on her visit to Orkney. Ring of Brogdar is one of the group of Neolithic monuments found on four sites on the Mainland, one of the islands of Orkney. The name "Heart of Neolithic Orkney" was adopted by UNESCO in 1999 when it proclaimed these four sites as a World Heritage Site.

Do send photographs for the next newsletter to the Editor at: hiatus@liv.ac.uk

Season's Greetings

As we look forward to 2014 we cannot leave 2013 without noting that the year marked the fiftieth anniversary of the moment when Drummond Matthews and Frederick Vine, both of the University of Cambridge, published a *Nature* paper: "Magnetic anomalies over ocean ridges". This evidence for sea floor spreading, which was discovered at the same time by Lawrence Morley of the University of Toronto, was a key development in the Theory of Plate Tectonics. For more information visit:

<https://www.geolsoc.org.uk/Plate-Tectonics>

What's new in the field?

Field photograph not taken in Orkney

Scottish Fossils

By Nigel Trewin and published by Dunedin Academic Press, 2013.
(ISBN: 97817804600192) Price: £30.00.

Colliding Continents

Written by Henry Gee and published by Oxford University Press, 2013.
(ISBN: 9780199653003) Price: £25.00.

Field Guide to the Geology of Gigha & Cara

J.G. MacDonald and Published in 2013 by Geological Society of Glasgow and written by J.G. MacDonald. (ISBN: 9780902892125) Price: £10.00.

Caves and Karst of the Yorkshire Dales

Edited by Tony Waltham & David Lowe and published in 2013.
(ISBN: 9780900265464) Price: £25.00.

The Coast of the Bristol Region: Quaternary Geology and Geomorphology

Published 2013 as Geologists' Association Guide No 71. Written by David Case. (ISBN: 9780900717666) Price: £17.00.

Geoheritage in Europe and its Geoconservation

Edited by W.A.P. Wimbledon and S. Smith and published by ProGeo in 2012. (ISBN: 9788242624765) Price: £59.99.

Geology of Ireland - A Field Guide

By P. Meere, I. MacCarthy, J.Reavy, A. Allen & K. Higgs. Published 2013. ISBN: 9781848891661) Price: £19.99.

Islands, Coast and Quarries: The Geological Heritage of Fingal

By Matthew Parkes. Published by Fingal County Council in 2012. Email: heritage@fingalcoco.ie to obtain a free-of-charge copy. (The print run quickly disappeared!)

Useful websites

<http://geopark.org.uk/pub/wp-content/uploads/2012/07/Aggregates-bppklet-for-website.pdf>

The 48 page booklet "Exploring Aggregates along the GeoPark Way" may be downloaded from this site.

<http://earthobservatory.nasa.gov/GlobalMaps/?eocn=topnav&eoci=globalmaps>

Click on one of the 13 global maps on this site and explore how key parts of Earth's climate system change from month to month.

<http://phys.org/news/2013-11-global-insights.html>

Global map providing new insights into land use.

<http://www.bbc.co.uk/news/science-environment-24770379>

Sea surrender plan to ease flood fears on south coast.

<http://phys.org/news/2013-11-nasa-typhoon-disaster-response.html>

NASA damage map helps in typhoon disaster response.

<http://www.bbc.co.uk/news/science-environment-24454138>

This site describes new ideas for how Earth's core formed.

<http://www.bbc.co.uk/news/science-environment-24821494>

Volcanic obsidian lava flows for a year.

<http://earthobservatory.nasa.gov/IOTD/view.php?id=82151>

On this site see how life has returned to Mount St Helens.

<http://phys.org/news/2013-10-d-reveals-iconic-volcano.html>

3-D model reveals new information about iconic volcano.

<http://www.bbc.co.uk/news/science-environment-24369244>

This site tells how the health of oceans is 'declining fast'.

<http://www.bbc.co.uk/nature/24331982>

Flowering plant origins pushed back 100 million years.

<http://phys.org/news/2013-11-oldest-ice-core-million-year-earth.html>

This site gives information about the oldest ice core found.

<http://phys.org/news/2013-11-diatom-algae-populations-story-climate.html>

Diatom algae populations tell a story about climate change in Greenland.

<http://phys.org/news/2013-11-gas-triggered-small-earthquakes-snyder.html>

Gas injection probably triggered small earthquakes near Snyder, Texas.

<http://www.bbc.co.uk/news/science-environment-24912233>

A site giving information about a vast Antarctic iceberg.

<http://phys.org/news/2013-10-google-street-viewtool-earthquake.html>

Google street view as a tool for recording earthquake damage.

<http://phys.org/news/2013-10-professor-national-earthquake-early.html>

Call for national earthquake early warning system.

<http://www.theguardian.com/science/video/2013/nov/07/dinosaur-fossil-lythronax-argestes-king-of-gore-video>

Dinosaur 'King of Gore' fossil discovered - video.

<http://www.dailymail.co.uk/sciencetech/article-2488452/Map-reveals-devastation-worlds-ice-melted.html>

How the Earth would look if all the ice melted.

<http://phys.org/news/2013-08-planet-ups-downs.html>

Mapping the planet's ups and downs.

<http://www.bbc.co.uk/news/science-environment-24067928>

Information about the five-fold rise seen in UK landslides.

<http://phys.org/news/2013-10-evidence-earth-oxygen-fell-great.html>

Did Earth's oxygen levels fall after the Great Oxidation Event?

<http://phys.org/news/2013-10-quantify-toxic-ocean-conditions-major.html>

Toxic ocean conditions during major extinction 93.9 million years ago.

<http://www.rsc.org/chemistryworld/2013/09/fossil-pigments-dinosaur-colour>

Colouring in the dinosaur book.

<http://www.gla.ac.uk/schools/ges/rockaround/>

Link to a fieldwork teaching resource.

<http://apod.nasa.gov/apod/ap130916.html>

'Rotating moon' - filmed by Nasa.



Ripple marked sandstone, Birsay

<http://phys.org/news/2013-11-links-earthquake-faults-slow-moving-depths.html>

Study links earthquake faults to slow-moving depths.

<http://www.theguardian.com/science/2013/oct/30/dinosaur-skeleton-simulation>

Dinosaur experts bring Argentinosaurus strolling back to life.

<http://www.theguardian.com/environment/2013/nov/04/china-dam-hydropower-boom-rivers>

China's dam boom.

<http://phys.org/news/2013-10-philippine-earthquake-miles-long-rocky-wall.html>

Philippine earthquake creates miles-long rocky wall.

<http://www.theguardian.com/science/video/2013/nov/01/volcanoes-predict-eruptions-active-video>

Volcanoes: we still can't predict - video.



Broch of Gurness



Causeway to Birsay



Lichen on sandstone, Birsay

Diary Dates 2013/14

6th December

Geologists' Association Lecture: "Virtual Palaeontology"
The Geological Society, London, W1J 0BG
Contact: sarah@geologistsassociation.org.uk

18th December

Shell London Lecture: "Lakes Beneath the Ice"
The Geological Society, London, W1J 0BG
Contact: www.geolsoc.org.uk/beneathice

1st January

Lecture: "A Perfect Storm: Food Water and Energy Security"
Imperial College London, London SW7 2AZ
Contact: admin@friendsofimperial.org.uk

8th - 11th January 2014

ASE Annual Conference, The University of Birmingham
Contact: <http://www.ase.org.uk/conferences/>

15th January

Higher Education Network Annual Meeting, Keele University
Contact: tom.argles@open.ac.uk

18th-19th January

The Hop Farm Rock 'n' Gem Show,
Hop Farm, Kent
Contact: www.rockngem.co.uk

21st January

Lecture: "The Engineering Geology of Chalk - a total rock approach"
The Geological Society, London, W1J 0BG
Contact: homecountiesnorth@geolsoc.org.uk

28th January

Conference: "Geoscience and the Welsh Economy"
Pierhead Building, Cardiff
Contact: swales.rg@geolsoc.org.uk

9th-10th February

Cheltenham Rock Gem 'n' Bead February Show
Contact: www.rockngem.co.uk

12th February

Shropshire Geological Society lecture: "Water along fault zones"
Shire Hall, Shrewsbury
Contact: www.shropshiregeology.org.uk

16th - 17th February

York Rock Gem 'n' Bead Show, York Racecourse
Contact: www.rockngem.co.uk

8th - 9th March

Kempton Park Rock 'n' Gem March Show
Contact: www.rockngem.co.uk

14th - 23rd March

National Science and Engineering Week 2014
Contact: www.britishtscienceassociation.org/national-science-engineering-week

5th - 20th April

Edinburgh International Science Festival
Contact: www.sciencefestival.co.uk/faq

12th - 13th April

Newton Abbot Rock Gem 'n' Bead Early Show
Newton Abbot Racecourse
Contact: www.rockngem.co.uk

14th - 16th April

Geographical Association Annual Conference: "Crossing Boundaries"
University of Surrey
Contact: www.geography.org.uk/

8th May

National Schools Geology Challenge
The Geological Society, London, W1J 0BG
Contact: www.geolsoc.org.uk/geochallenge

31st May

European Geoparks Week
Contact: www.europeangeoparks.org/



Sea defences, Birsay - spot the concrete here

Kirkwall Cathedral

Sea stack, Yesnaby coast

Conferences during 2014 and 2015

22nd February 2014 Herdman Symposium: "Geoscience Frontiers 5", Liverpool University
Contact: herdman@liv.ac.uk

5th - 9th September 2014 International Geoscience Education Conference: "GeoSciEd VII" Hyderabad, India.
A new International Curriculum in Earth science will be launched in a seminar dedicated to the memory of David Thompson. Contact: www.geoscienced.org/conferences.htm

26th - 28th September 2014 ESTA Annual Course and Conference: "Earth Science and Planetary Science"
Open University, Milton Keynes Contact: linmarshall@btinternet.com

September 2015 ESTA Annual Course and Conference at Cardiff University (n.b. Date to be confirmed)

Please note: Information about ESTA Conference 2014 will be on-line (March 2014). Bookings will be available via the web.

ESTA is looking for volunteers

Can you spare a couple of hours to look after the ESTA stand at ASE Conference 2014 (University of Birmingham), Geographical Association Conference 2014 (University of Surrey) or at ESTA Conference, 2014 (Open University)? If you live near one of these venues and can help, please email: webmaster@esta-uk.net with the subject BOARDS.

New items on the ESTA website

1. Virtual experiments ("Resistivity" and "Porosity") have been added. Early in 2014 two further sets of virtual experiments will be added: "Drilling for oil" and "Speed of cooling".
2. "Blasts from the Past" - a new section with re-written and updated exercises/ activities from early ESTA and ATG publications.
3. An archive section with PDFs of ATG and ESTA journals/magazines up to 2001. (In early 2014 a second archive will be added so you access all other ESTA publications)
4. Links to each university Geoscience/ Earth Science Department. in the UK.

Final note: The password to the ESTA website will be changing. Please ensure you renew your ESTA subscription for 2013/14 by 31st January 2014, so you don't lose your access to all of the ESTA website.

Don't forget - you can now follow ESTA on Facebook and Twitter.



Why not become an ESTA MENTA?

Would you like to become an ESTA Mentor for someone new to the geology-teaching profession either because they are newly qualified, or because they have decided to start geology in their own school? Your mentoring role might involve: visiting the school (subject to permission of the Head) to carry out a review with them of facilities, resources and schemes of work; observing a lesson & providing feedback; recommending ESTA membership and introducing them to all the ESTA membership benefits; discussing issues likely to be of concern to new teachers, such as:

- | | |
|---|-----------------------------------|
| carrying out effective fieldwork & practical work | recruiting students to the course |
| purchasing the most cost-effective resources | maximising exam results |
| building and maintaining rock/fossil teaching collections | good field locations |

You would need to be a teacher, or recently retired from teaching geology at GCSE and/or A-level, and willing to give freely of time and advice. **If you are interested, please contact Chris King at: chris@cjhking.plus.com**

ESTA Secondary Working Group Meeting

The next meeting will be held between 10.00a.m. and 4.00p.m. at Keele University on Saturday 17th May, 2014. ESTA will pay travelling expenses, provide lunch and tea/coffee and, for those members travelling a long distance, may be able to provide overnight accommodation in the Keele Management Centre. **Contact: chris@cjhking.plus.com**



Photographs of the view near Broch of Gurness and remains at Skara Brae: Northern Europe's best-preserved Neolithic village



Quotes of the day



Puffins, Birsay

Orkney is an archipelago of 70 or so islands and currently 17 of them are inhabited.

Orkney's Ring of Brodgar is 3 times larger and 1000 years older than the famous stone circle of Stonehenge in England.

Orkney has the lowest unemployment in Scotland.

Orkney is Scotland's busiest cruise ship port.

Orkney wines are made from various locally grown fruit and flowers.

Scotland's first free lending library opened in Orkney in 1683.

Orkney is in the Guinness Book of Records for the world's shortest scheduled flight: Westray to Papa Westray, with a flying time of less than 2 minutes.

For other fascinating facts about Orkney go to: http://www.orkneytourism.com/orkney_facts.htm



The RSPB is the biggest landowner on Orkney Island.

Cliffs on the Isle of Hoy are the tallest cliffs in the UK

The sea stack called the Old Man of Hoy was first climbed in 1966.

The first oil flowed into Orkney in 1977.

Britain's most northerly natural woodland is on Hoy. It is relict woodland remaining from after the last ice age.

"Orkney and Shetland: A Landscape Fashioned by Geology"
by Alan McKirdy (2010) ISBN: 9781853976025 Price: £7.95.

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