

ESTA COUNCIL 2017

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Best wishes for 2018

This issue of ESTA News is mainly illustrated with images taken by Jo Conway (ESTA Chair) on a visit to Walcott Quarry, British Columbia during 2013. Jo's hike to this UNESCO World Heritage site was a round trip of 22km. It began at the Yoho Trading Post and then went to the trail-head of the Takakkaw Falls. Jo's hike started at 1510m & gained 825m in elevation before reaching the quarry.



British Columbia Flag

The British Columbia flag is based upon the shield of the provincial arms of British Columbia. The top is a rendition of the Royal Union Flag. The setting sun below, represents the location of the province of British Columbia at the western end of Canada.



Credit: Foeyshell (published under the Creative Commons Attribution-Share Alike 3.0 Unported license).

Please send photographs for the newsletter to the Editor: hiatus@liv.ac.uk

What's new in the field?

Caves and Karst of the Yorkshire Dales (Volume 2)

Edited by Tony Waltham & David Lowe. Published 2017.
(ISBN 9780900265488) Price: £30.00.

Geology of the South Devon Coast: from the Dorset county boundary to the Brixham area.

By John C.W. Cope. Published 2017. (ISBN: 9780900717918).
Price: £12.

An Excursion Guide to the Geomorphology of the Howgill Fells

Written by Adrian Harvey. Published 2017. (ISBN: 9781780460703)
Price: £14.95.

Herefordshire's Rocks and Scenery: A Geology of the County

Written by John Payne and published 2017. (ISBN: 9781910839164) Price: £15.

The Coast-to-Coast Walk: Rocks & Scenery

By Barry Butler & John Gunner. Published 2017. (ISBN: 9781912014521) Price: £14.50.

A Guide to Fossil Collecting in England and Wales

Written by Steve Snowball & Craig Chapman. Published 2017. (ISBN: 9780992997991) Price: £12.99.

Geology in the Field 2nd Edition

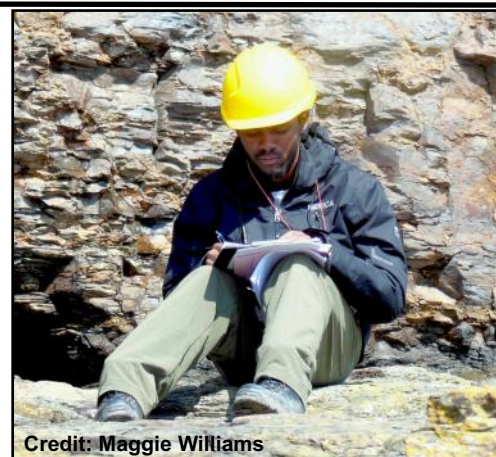
Written by Robert R. Compton. Published December 2017. (ISBN: 9780471152293) Price: £55.50.

The Brecks Earth Heritage trail leaflet and ebook.

Download from: www.breakingnewground.org.uk/earthheritagetrail/

Geological stone pillars.

Information about one of England's first ever "Geological Trails" created in Rochdale available from:
<http://rochdale-past.co.uk/geological-stone-pillars/>



Credit: Maggie Williams

Useful websites

Web resources - Burgess Shale

<http://burgess-shale.rom.on.ca/en/history/discoveries/02-walcott.php>

<https://www.burgess-shale.bc.ca/>

https://en.wikipedia.org/wiki/Fossils_of_the_Burgess_Shale

Burgess Shale fossils - all of Prof. Mark Wilson's images below are public domain and may be freely used for any purpose:

<https://commons.wikimedia.org/wiki/User:Wilson44691>

Other resources

Field trip guide to Mount St. Helens, Washington.

<https://pubs.er.usgs.gov/publication/sir20175022D>

How to see the atmosphere.

<https://phys.org/news/2017-11-atmosphere.html>

Plate tectonics: When we discovered how the Earth really works.

<http://www.bbc.co.uk/news/science-environment-41472281>

Maps for selected California earthquakes.

<http://geology.com/earthquake/california.shtm>

REE - Rare Earth Elements and their uses.

<http://geology.com/articles/rare-earth-elements/>

Eyes on the coasts - video cameras help forecast coastal change.

<https://www.usgs.gov/news/eyes-coast-video-cameras-help-forecast-coastal-change>

News items

Volcanic crystals give a new view of magma.

<https://phys.org/news/2017-06-volcanic-crystals-view-magma.html>

Research opens fresh view on volcanic plumbing systems.

<https://phys.org/news/2017-07-fresh-view-volcanic-plumbing.html>

Crystals help volcanoes cope with pressure.

<https://phys.org/news/2017-07-crystals-volcanoes-cope-pressure.html>

Darwin's 'strangest animal ever' finds a family.

<https://phys.org/news/2017-06-darwin-strangest-animal-family.html>

Fossil sheds light on bird evolution after asteroid strike.

<http://www.bbc.co.uk/news/science-environment-40535631>

Bulges' in volcanoes could be used to predict eruptions.

<https://phys.org/news/2017-06-bulges-volcanoes-eruptions.html>

Could climate change shut down the Gulf Stream?

<http://www.ldeo.columbia.edu/news-events/could-climate-change-shut-down-gulf-stream>

Distant earthquakes can cause underwater landslides.

<https://phys.org/news/2017-06-distant-earthquakes-underwater-landslides.html>

Greenland now a major driver of rising seas.

<https://phys.org/news/2017-06-greenland-major-driver-seas.html>

Details about the Greenland landslide and tsunami.

<http://blogs.agu.org/landslideblog/2017/06/21/greenland-landslide-3>

Scientists are putting tens of thousands of sea fossils online.

<http://www.smithsonianmag.com/smart-news/scientists-are-putting-tens-thousands-sea-fossils-online-180963792/>

Study bolsters theory of heat source under Antarctica.

<https://phys.org/news/2017-11-bolsters-theory-source-antarctica.html>

Cool idea: Magma held in 'cold storage' before giant volcano eruption.

<https://phys.org/news/2017-11-cool-idea-magma-held-cold.html>

How the Pacific seafloor got its 60-degree bend.

<https://phys.org/news/2017-11-pacific-seafloor-degree.html>

Scientists simulate new mechanism of fluid flow in Earth's crust.

<https://eos.org/research-spotlights/scientists-simulate-new-mechanism-of-fluid-flow-in-earths-crust>

Evidence of catastrophic landsliding from medieval earthquakes in Nepal.

<https://blogs.agu.org/landslideblog/2017/11/08/catastrophic-landsliding-nepal/>

Scientists monitor the rise and fall of Lake Chad.

<https://earthobservatory.nasa.gov/Features/LakeChad/>

General view of Walcott Quarry, sunny and warm in August, but unfortunately that means the midgets are also around!



"The best way to make a collection from the 'fossil bed' is to ride up the trail on a pony to about 2000 feet [about 600 m] above the railroad, collect specimens, securely wrap them in paper, place them in a bag, tie the bag to the saddle, and lead the pony down the mountain. A fine lot can be secured in a long day's trip, 6 a.m. to 6 p.m."

Charles Doolittle Walcott

N.B. Please don't attempt to follow Walcott's advice - you now need a research and collecting permit to collect fossils from the area.

When continents break it gets warm on Earth.

<https://phys.org/news/2017-11-continents-earth.html>

Lahars: an analysis of their role in losses from volcanic eruptions.

<http://blogs.agu.org/landslideblog/2017/10/09/lahars-1/>

When ice yields fire.

<https://www.usgs.gov/news/when-ice-yields-fire>

An 1888 volcanic collapse becomes a benchmark for tsunami models.

<https://eos.org/project-updates/an-1888-volcanic-collapse-becomes-a-benchmark-for-tsunami-models>

Ice sheets may melt rapidly in response to distant volcanoes.

<https://phys.org/news/2017-10-ice-sheets-rapidly-response-distant.html>

New magma pathways after giant lateral volcano collapses.

<https://phys.org/news/2017-10-magma-pathways-giant-lateral-volcano.html>

Evidence that Siberian volcanic eruptions caused extinction 250 my ago.

<https://phys.org/news/2017-10-evidence-life-earth-meteorites-splashed.html>

When water met iron deep in the Earth, did it create conditions for life?

<https://phys.org/news/2017-11-met-iron-deep-earth-conditions.html>

Salt pond in Antarctica is fed from beneath.

<https://phys.org/news/2017-11-salt-pond-antarctica-saltiest-earth.html>

First detailed simulation of 2004 megathrust earthquake.

<https://phys.org/news/2017-11-simulation-megathrust-earthquake.html>

Catastrophic landsliding from medieval earthquakes in Nepal.

<https://blogs.agu.org/landslideblog/2017/11/08/catastrophic-landsliding-nepal/>

The legacy of the 1992 Nicaragua tsunami.

<https://eos.org/features/the-legacy-of-the-1992-nicaragua-tsunami>

The world's most northerly sand dunes.

<http://www.smithsonianmag.com/travel/see-most-northerly-sand-dunes-world-180964704/>

How rapid climate change on Greenland will affect us all.

<http://www.independent.co.uk/environment/greenland-how-rapid-climate-change-on-worlds-largest-island-will-affect-us-all-a7926006.html>

A promising new tool for forecasting volcanic hazards.

<https://eos.org/research-spotlights/a-promising-new-tool-for-forecasting-volcanic-hazards>

When continents break it gets warm on Earth.

<https://phys.org/news/2017-11-continents-earth.html>



Jo at Yoho Lake (about 4km into the walk). The water is beautifully clear – but blinking cold!



The Burgess Shale Geoscience Foundation airlifts a cabinet in each year with safety equipment, and also to store some great specimens.



Looking back on the trail up to Walcott Quarry and towards Emerald Glacier.

Diary Dates 2017-18

11th December 2017

Lecture: Dangerous Neighbours
Venue: The Geological Society, Burlington House, London
Contact: www.geolsoc.org.uk/DangerousNeighbours17

3rd-6th January 2018

Event: ASE Conference
Venue: University of Liverpool
Contact: www.ase.org.uk/conferences/annual-conference/

4th January 2018

OUGS Lecture: The Geology of Easter Island (Rapa Nui) and the Moai
Venue: Gass Building, Walton Hall, Milton Keynes
Contact: Dr. Zbig Towalski: zbigtowalski@outlook.com

13th January 2018

Lecture: Flying Fossils
Venue: Williamson Lecture Theatre, Manchester University
Contact: www.mangeolassoc.org.uk/indoormeetings.htm

13th January 2018

Lecture: Dinosaur hunting in Morocco
Venue: Geography Department, Nottingham University
Contact: www.emgs.org.uk

16th-17th January 2018

GSL HEN Annual Meeting 2018 'The Way to Work'
Venue: University of Plymouth
Contact: <https://www.geolsoc.org.uk/GSL-Higher-Education-Network-Annual-Meeting-2018>

17th January 2018

Dealing with unexpected eruptions on volcanic islands
Venue: Abbot Hall Social Centre, Kendal.
Contact: www.westmorlandgeolsoc.co.uk

20th January 2018

OUGS Field course: Hudeshope Beck, Teesdale
Contact: Karl Egeland-Eriksen: egeland-eriksen@hotmail.com

20th-21st January 2018

Rock, Bead 'n' Gem Show, Chepstow Racecourse
Contact: www.rockngem.co.uk/show-dates/

23rd January 2018

Lecture: Greenlandic ice cap behaviour during the last millennium
Venue: Byrom Street, Liverpool John Moores University
Contact: www.liverpoolgeologicalsociety.org

27th-28th January 2018

Hop Farm Rock, Bead 'n' Gem Show, Tonbridge, Kent
Contact: www.rockngem.co.uk/show-dates/

6th February 2018

Lecture: River pollution
Venue: Byrom Street, Liverpool John Moores University
Contact: www.liverpoolgeologicalsociety.org

7th February 2018

Lecture: Aspects of North Island geology
Venue: School of Earth, Atmospheric and Environmental Sciences, University of Manchester
Contact: <http://www.mangeolassoc.org.uk/indoormeetings.htm>

15th February 2018

OUGS Field course: Building Stones walk at the British Library
Contact: Sue Vernon: sue@lougs.org.uk

17th February 2018

Lectures: Herdman Symposium
Venue: Central Teaching Hub, University of Liverpool
Contact: herdmansociety@gmail.com

20th February 2018

Lecture: lake sediments
Venue: Byrom Street, Liverpool John Moores University
Contact: www.liverpoolgeologicalsociety.org

24th-25th February 2018

Rock, Bead 'n' Gem Show, Harrogate
Contact: www.rockngem.co.uk/show-dates/

27th-28th February 2018

Rock, Bead 'n' Gem Show, Cheltenham racecourse
Contact: www.rockngem.co.uk/show-dates/

2nd March 2018

Lecture: Redrawing the geological map of South Wales
Venue: Burlington House, Piccadilly W1V 0JU.
Contact: <https://geologistsassociation.org.uk/lectures.html>

3rd-4th March 2018

Rock, Bead 'n' Gem Show, Kempton Park racecourse
Contact: www.rockngem.co.uk/show-dates/

12th - 25th March 2018

Cambridge Science Festival 2018
Contact: www.sciencefestival.cam.ac.uk/

14th March 2018

Lecture: The real use of microfossils
Venue: Geography Department, Nottingham University
Contact: www.emgs.org.uk

17th-18th March 2018

Rock, Bead 'n' Gem Show, Brighton racecourse
Contact: www.rockngem.co.uk/show-dates/

18th March 2018

OUGS Field course: An Introduction to the Geology of Portishead
Contact: Norman Nimmo-Smith: nmsmith@hotmail.com

21st March 2018

Sounds from the subsurface – a geophysicist's view of the Earth beneath our oceans
Venue: Abbot Hall Social Centre, Kendal.
Contact: www.westmorlandgeolsoc.co.uk

24th-25th March 2018

Rock, Bead 'n' Gem Show, Exeter racecourse
Contact: www.rockngem.co.uk/show-dates/

5th-7th April 2018

Event: Geographical Association Conference
'Real world geography'
Venue: Sheffield Hallam University
Contact:

www.geography.org.uk/cpdevents/annualconference/sheffield2018/

6th April 2018

Lecture: How It's Made: Volcanoes
Venue: Burlington House, Piccadilly W1V 0JU.
Contact: <https://geologistsassociation.org.uk/lectures.html>

7th-8th April 2018

Rock, Bead 'n' Gem Show, Musselburgh racecourse
Contact: www.rockngem.co.uk/show-dates/

14th April 2018

ESTA Secondary Working Group Meeting
Venue: Keele University
Contact: chrisjking36@gmail.com

28th-29th April 2018

Rock, Bead 'n' Gem Show, Newark Showground, Nottinghamshire
Contact: www.rockngem.co.uk/show-dates/

4th May 2018

Lecture: Geoconservation for science and society
Venue: Burlington House, Piccadilly W1V 0JU.
Contact: <https://geologistsassociation.org.uk/lectures.html>

1st June 2018

Lecture: Geological disposal of radioactive waste in the UK
Venue: Burlington House, Piccadilly W1V 0JU.
Contact: <https://geologistsassociation.org.uk/lectures.html>

14th-15th June 2018

Course for A-level geology teachers
'Measuring up to the new A-Level specifications'
Venue: Central Teaching Hub, University of Liverpool
Contact: hiatus@liv.ac.uk



View looking down on Emerald Lake

The Burgess Shale was designated a World Heritage Site in 1980. Today it forms part of the Canadian Rocky Mountain Parks World Heritage Site.



United Nations
Educational, Scientific and
Cultural Organization



Iconic view of Mount Wapta from the Walcott Quarry

News about the ESTA website

- The 'Blasts from the past' section has been updated so that there are now 10 activities for you to download.
- Three new items have been added to GEOTREX section covering Geological Time.
- The website now includes a link to the Tomlinson Brown Trust website where you can find out how to apply for funding to support a field trip, a new Earth Sciences initiative or a project that increases the public's knowledge of the natural world.



TOMLINSON BROWN TRUST



@ESTA_UK

Don't forget that you can send in items to be added to GEOTREX by emailing: webmaster@esta-uk.net

N.B. The password to the members' section of the ESTA website will be changing in the New Year. You will be sent an email giving you the new password.



Kootenia burgessensis (trilobites are just lying around on the quarry floor - Walcott was only interested in new species!)



Possibly a Oryctcephalus matthewi (although the names keep changing!)

ESTA volunteers needed

If you live near to Liverpool or Sheffield, can you spare a couple of hours to look after the ESTA stand at one of the following conferences in 2018?

- ASE Conference at the University of Liverpool, 3rd-6th January
- The Geographical Association Conference at Sheffield Hallam University, 5th-7th April

If you can help, please email: webmaster@esta-uk.net with the subject BOARDS.



GeoEd Ltd

GeoEd Ltd has moved to Scarborough. Will Watts, the new owner, will be running it alongside Hidden Horizons Ltd his present company. Don't worry - it will be business as usual. If you have any queries email or call Will: fossil@geoed.co.uk 01723 817017

Dee & Dave, owners for the last 20 years, are looking forward to a well-earned retirement.



Posters

Climate change - a new poster 'Animals at Risk from Climate Change' is now available from The Global Education Project .

To view all the elements in the poster, or to order a copy, visit: www.theglobaleducationproject.org/climate-change

'Pebbles in Essex and Beyond' - a poster illustrating pebbles to be found in Essex and telling the story of the Thames in Essex. Mainly aimed at Essex, it is applicable to much of East Anglia and southern Britain.

For more details visit: www.irms.org/pebbles-poster.html

Quotes of the Day

British Columbia is famed for its natural beauty, as reflected in its Latin motto: *Splendor sine occasu* (meaning: splendour without diminishment)

"Life is a copiously branching bush, continually pruned by the grim reaper of extinction, not a ladder of predictable progress."

Stephen Jay Gould, *Wonderful Life: The Burgess Shale and the Nature of History*

"The Burgess Shale is not unique, but for those who study evolution and fossils it has become something of an icon. It provides a reference point and a benchmark, a point of common discussion and an issue of universal scientific interest."

Simon Conway Morris

"Wind back the tape of life to the early days of the Burgess Shale; let it play again from an identical starting point, and the chance becomes vanishingly small that anything like human intelligence would grace the replay."

Stephen Jay Gould

BC is the only province in Canada to experience a "West Coast special": ski and golf in the same day

"Electronic surveillance protects the quarry, in the form of cameras and motion detectors which are linked via satellite to monitoring offices. The guide told us about two tourists who stole specimens after hiking to the quarry without a guide, the tourists were caught after the motion sensors alerted the monitors. Police were then dispatched and intercepted the tourists at the airport."

Jo Conway

British Columbia is one of the top 3 producing regions of cranberries and blueberries in the world.

The Provincial Gemstone of British Columbia is Jade.

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There are 18 UNESCO World Heritage Sites in Canada. They are split almost equally between includes cultural sites and natural sites. Head-Smashed-In Buffalo Jump in southwest Alberta is one of these site and it was featured in ESTA News 3.2. For more information about these sites visit: <https://everything-everywhere.com/unesco-world-heritage-sites-in-canada/>