**ESTA COUNCIL 2016**

contact@esta-uk.net

Nikki Edwards

Chairman

David Bailey

Secretary

Elouise Gill

Membership Secretary

Carole Rushall

Treasurer

Hazel Clark

Editor (TES)

Tracy Atkinson

Primary Co-ordinator

Chris King

Secondary Co-ordinator

Tom Argles

H.E. Co-ordinator

ESTA News 2017

This issue of ESTA News is illustrated with photographs taken by the Editor on a visit to Finnish Lapland in the winter of 2017. Winter, the main season in northern Fennoscandinavia, lasts for 6 months so provides ample opportunities for cross-country & downhill skiing, snowshoe walking - and experiencing the Northern Lights..



Typical Finnish landscape - lakes and forests



The flag of Finland, featuring a blue Nordic cross on a white background, is called siniristilippu ("Blue Cross Flag"). This flag dates from the beginning of the 20th century. Its blue colour represents the country's thousands of lakes and the sky; the white represents the snow that covers the land in winter.

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

What's new in the field?**A photographic guide to Shetland's geology**

By D. Malcom & R.R. Barton (2015). (ISBN: 9781904746973) Price: £15.99.

Bedrock and building stones: Geology exposed in the City of Sunderland

By Andy Lane. Published 2014. (ISBN: 9780992955502) Price: £14.50.

Fossils of the Jurassic coast

By Sam Scriven. Published 2016. (ISBN: 9780993110719). Price: £14.95.

The geology and landscape of South West England

Published 2016. By R. Westwood. (ISBN: 9780992807351) Price: £9.99.

Drawing geological structures

By J.H. Kruhl. Published 2017. (ISBN: 978-405182324. Price: £29.99.

Rock trails South Wales - a hillwalker's guide to the geology & scenery.

By Paul Gannon and published in 2016. (ISBN: 9781906095529) Price: £14.95.

The glorious geology of Iceland's Golden Circle (GeoGuide)

Published 2017 and written by Agust Gudmundsson. (ISBN: 97833195515170) Price: £16.50.

Geology of the Dorset Coast (2nd Ed)

By JCW Cope and published in 2016. (ISBN: 9780900717864) Price: £14.

Geological landscapes and the British peoples

By M. Leeder & J. Lawlor. Published 2016. (ISBN: 9781780460604) Price: £24.99.

Soil (Earth Rocks)

Published in 2016. Written by Richard Spilsbury. (ISBN: 9781526302014)

Price: £12.99.

The geology & fossils of Bracklesham & Selsey

Published in 2016 and written By David Bone. (ISBN: 9780956201836) Price: £4.

For more information about the geology of Finland here is a link to the Geological Survey of Finland:

<http://en.gtk.fi/>



Useful websites

Web resources

Lite Geology for articles, classroom activities, teachers' resources & web links.

<http://geoinfo.nmt.edu/publications/periodicals/litegeology/current/>

Explore Earth science lessons from NASA.

<https://www.jpl.nasa.gov/edu/teach/tag/search/Earth%20science>

Access to free to view publications produced by the BGS.

<http://www.bgs.ac.uk/data/publications/pubs.cfc?method=viewHome>

Video Illustrating the mobility of landslides.

<http://blogs.agu.org/landslideblog/2017/04/09/papamoa-1/>

The London pavement geology mobile app - free app (new for 2016).

<http://londonpavementgeology.co.uk/mobileapp/>

NASA just made all the scientific research it funds available for free.

<http://www.sciencealert.com/nasa-just-made-all-the-scientific-research-it-funds-available-for-free>

The 2013 Bingham Canyon landslide, moment by moment.

<https://phys.org/news/2017-03-bingham-canyon-landslide-moment.html>

Mesmerising animation of 2016 sea surface temperature.

<https://phys.org/news/2017-04-mesmerising-animation-sea-surface-temperature.html>

News items

Continental crust model sheds light on processes that took place three to four billion years ago.

<https://phys.org/news/2017-05-continental-crust-illuminates-billion-years.html>

Iceland drills 4.7km down into volcano to tap clean energy.

<https://phys.org/news/2017-05-iceland-drills-km-volcano-energy.html>

Whole-mantle convection with tectonic plates preserves long-term global patterns of upper mantle geochemistry

<https://phys.org/news/2017-05-whole-mantle-convection-tectonic-plates-long-term.html>

Jurassic drop in ocean oxygen lasted a million years.

<https://phys.org/news/2017-05-jurassic-ocean-oxygen-million-years.html>

Giant lava lamp inside Earth - is it flipping the planet's magnetic field?

<https://phys.org/news/2017-05-giant-lava-lamp-earth-flipping.html>

The USGS ShakeCast System.

<https://www.usgs.gov/news/usgs-shakecast-system>

How dinosaurs may have evolved into birds.

<https://phys.org/news/2017-05-dinosaurs-evolved-birds.html>

Why the constant earthquakes? Iceland is slowly being torn apart.

<http://icelandmag.visir.is/article/why-constant-earthquakes-iceland-slowly-being-torn-apart>

Massive craters formed by methane blow-outs from the Arctic sea floor.

<https://phys.org/news/2017-06-massive-craters-methane-blow-outs-arctic.html>

San Andreas Fault Map - zoom in for a closer look on Google Earth!

<http://geology.com/san-andreas-fault/>

Scientists discover why rocks flow slowly in Earth's middle mantle.

<https://phys.org/news/2017-06-scientists-slowly-earth-middle-mantle.html>

The mysterious bend in the Hawaiian-Emperor chain.

<https://phys.org/news/2017-06-mysterious-hawaiian-emperor-chain.html>

Unravelling Earth's magnetic field.

<https://phys.org/news/2017-03-unravelling-earth-magnetic-field.html>

Dinosaur crater's clue to origin of life.

<http://www.bbc.co.uk/news/science-environment-39361007>

Volcanic arcs form by deep melting of rock mixtures.

<https://phys.org/news/2017-04-volcanic-arcs-deep-mixtures.html>

'Nesting doll' minerals offer clues to Earth's mantle dynamics.

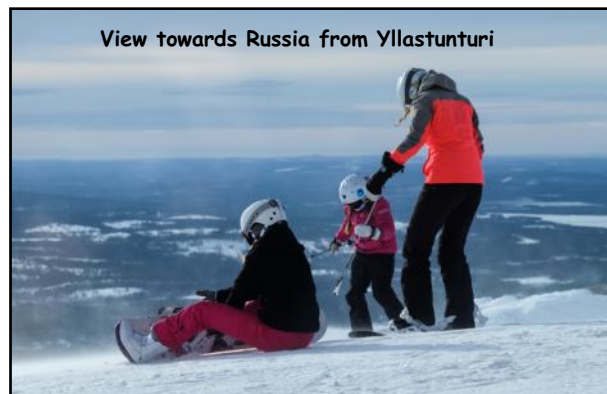


Restaurant on the top of the fell at Yllas. This building is based on shape of the traditional kota (a Sami hut made of timber).



Ski run from the top of Yllastunturi

Yllas or Yllastunturi is a 718-metre high fell within the arctic circle. It is the highest fell in Finland where you can find ski lifts.



View towards Russia from Yllastunturi

Renewables' deep-sea mining conundrum.

<http://www.bbc.co.uk/news/science-environment-39347620>

How nickel played a role in the world's worst mass extinction.

<https://phys.org/news/2017-04-death-metalhow-nickel-role-world.html>

World's largest recorded earthquake: 9.5 Magnitude.

<http://geology.com/records/largest-earthquake/>

An improved model of how magma moves through the crust.

<https://eos.org/research-spotlights/an-improved-model-of-how-magma-moves-through-the-crust>

Europe's famed bog bodies starting to reveal their secrets.

<http://www.smithsonianmag.com/science-nature/europe-bog-bodies-reveal-secrets-180962770/>

'Fossil' groundwater's modern secret.

<http://www.bbc.co.uk/news/science-environment-39715738>

Volcanic arcs form by deep melting of rock mixtures.

<https://phys.org/news/2017-04-volcanic-arcs-deep-mixtures.html>

Palaeontologists looking at dinosaurs with virtual reality.

<https://phys.org/news/2017-05-paleontologists-dinosaurs-virtual-reality.html>

New interpretation of early continental crust.

<https://phys.org/news/2017-05-petrogenesis-earth-early-continental-crust.html>

How world's biggest volcanoes formed.

<https://phys.org/news/2017-05-scientists-world-biggest-volcanoes.html>

Ancient meteorite impact sparked long-lived volcanic eruptions.

<https://phys.org/news/2017-05-ancient-meteorite-impact-long-lived-volcanic.html>

Imaging of massive 5-fingered Icelandic mantle plume.

<https://phys.org/news/2017-05-tomographic-imaging-massive-five-fingered-icelandic.html>

Alteration along the Alpine Fault helps build seismic strain.

<https://eos.org/research-spotlights/alteration-along-the-alpine-fault-helps-build-seismic-strain>

San Andreas fault map - zoom in for a closer look!

<http://geology.com/san-andreas-fault/>

World's oldest plant-like fossils discovered.

<https://phys.org/news/2017-03-world-oldest-plant-like-fossils.html>

Athabasca oil sands - satellite images of change over time.

<http://earthobservatory.nasa.gov/Features/WorldOfChange/athabasca.php>

Diary Dates 2017

Until 30th September 2017

Exhibition: Riches of the Earth - the beauty of minerals

Venue: 16 Queen Square, bath

Contact: www.brsls.org

1st July 2017

BGS Open Day

Venue: BGS Keyworth

Contact: www.bgs.ac.uk/news/events/openday/

1st - 2nd July 2017

OUGS Field excursion: Geological tour round the grounds of

Nottingham University

Venue Nottingham University

Contact: oxf.library@ougs.org

8th - 9th July 2017

Event: Rock Gem 'n' Bead July Show

Venue: Royal Welsh Showground, Builth Wells

Contact: www.rockngem.co.uk/show-dates/

22nd - 23rd July 2017

Event: Rock Gem 'n' Bead July Show

Venue: Newcastle Racecourse

Contact: www.rockngem.co.uk/show-dates/

25th - 28th July 2017

Course: Geoscience Education Academy

Venue: Geological Society, Burlington House, London

Contact: www.geolsoc.org.uk/gea

5th - 6th August 2017

Event: Rock Gem 'n' Bead August Show

Venue: Kempton Park Racecourse

Contact: www.rockngem.co.uk/show-dates/

12th - 13th August 2017

Event: Rock Gem 'n' Bead August Show

Venue: Pavilions Harrogate

Contact: www.rockngem.co.uk/show-dates/

9th - 10th September 2017

Event: Rock Gem 'n' Bead Show

Venue: Chepstow Racecourse

Contact: www.rockngem.co.uk/show-dates/

13th September 2017

Lecture: "Not under my backyard": are public perceptions of the risk of geological engineering projects well-founded?

Venue: The Geological Society, Burlington House, London

Contact: www.geolsoc.org.uk/PublicPerceptionsrisk17

29th September - 1st October 2017

ESTA Annual Course and Conference: Education and Geoconservation

Keele University

Contact: conference@esta-uk.net

7th - 15th October 2017

Event: Earth Science Week 2017 - Our Restless Earth

Venue: Events held at various places across the UK and Ireland

Contact: www.geolsoc.org.uk/earthscienceweek

11th October 2017

Lecture: Re-interpretation of the Ediacaran fauna of Longmynd

Venue: Shropshire Wildlife Trust HQ in Abbey Foregate, Shrewsbury

Contact: www.shropshiregeology.org.uk

12th October 2017

Lecture: The Aberfan Disaster: Learning from the Past

Venue: Michael Sadler Building, Leeds University

Contact: www.leedsga.org.uk/

18th October 2017

Lecture: Fault growth and interactions - implications for earthquake hazard and risk assessment

Venue: The Geological Society, Burlington House, London

Contact: www.geolsoc.org.uk/EarthquakeHazard17

21st October 2017

Event: Cave Science Symposium

Venue: Michael Sadler Building, Leeds University

Contact: www.leedsga.org.uk/

21st - 22nd October 2017

Event: Rock Gem 'n' Bead October Show

Venue: Newton Abbot Racecourse

Contact: www.rockngem.co.uk/show-dates/

4th - 5th November 2017

Event: GA Festival of Geology 2017

Venue: University College London

Contact: <https://geologistsassociation.org.uk/festival.html>

4th - 5th November 2017

Event: Rock Gem 'n' Bead November Show

Venue: Cheltenham Racecourse.

Contact: www.rockngem.co.uk/show-dates/

17th November 2017

Geological Mapping of the Chalk Aquifer: A Hydrological Case Study

Venue: Michael Sadler Building, Leeds University

Contact: www.leedsga.org.uk/

18th November 2017

The Broadhurst Lectures: Deep Earth Matters

Venue: Williamson Lecture Theatre, Manchester University

Contact: www.mangeolassoc.org.uk/indoormeetings.htm

22nd November 2017

Lecture: Why Earth developed into the crucible of life, and Venus into a hostile wasteland

Venue: The Geological Society, Burlington House, London

Contact: www.geolsoc.org.uk/EarthvsVenus17

9th December 2017

Lecture: Aspects of Planetary Geology in the Solar System

Venue: Williamson Lecture Theatre, Manchester University

Contact: www.mangeolassoc.org.uk/indoormeetings.htm

11th December 2017

Lecture: Dangerous Neighbours

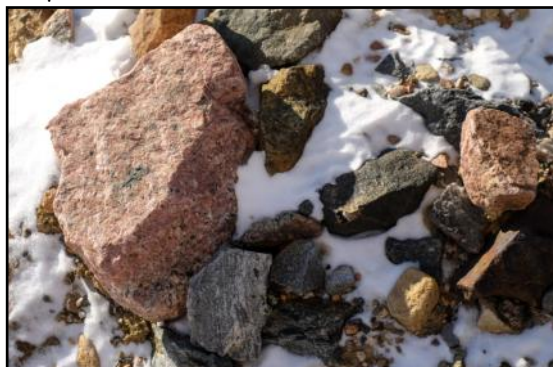
Venue: The Geological Society, Burlington House, London

Contact: www.geolsoc.org.uk/DangerousNeighbours17

The Yllas region and the Pallas-Yllastunturi national park sits on 2-billion-year-old Precambrian bedrock. Unfortunately, for 6 months of the year, most of the local rocks are only exposed as snow melts!



Finland's first national parks were set up in 1938. Today 39 national parks exist. Established by law on state-owned land, their primary purpose is to ensure the diversity of Finnish nature. To celebrate 100 years of independence, Finland is establishing a new park in eastern Finland at Hossa in the Kainuu region. More details about national parks can be found at: <http://www.nationalparks.fi/en/nationalparks>



News about the ESTA website



- 'Blasts from the past' updated so that there are now 9 activities available to download.
- The website includes information about the next PESGB-ESTA competition for schools to celebrate Earth Science Week 2017.
- Information about the ESTA Conference 2017 has been updated.



ESTA members can register their interest to attend the conference by emailing: conference@esta-uk.net

#ESTA17



Keele Hall, Keele University - a stunning setting for ESTA's 50th Anniversary Conference Dinner



Northern Lights at Yllas

According to legend, it is a firefox swinging its tail that makes the fells sparkle and creates the Northern Lights.

Around 65 per cent of Finland's total land area is covered in forest. Finland is one of the world's largest producers of pulp, paper and cardboard.



Forested areas in Yllas

ESTA volunteers needed

Can you spare a couple of hours to look after the ESTA stand at one of the following conferences?

- ASE Conference at the University of Liverpool on 3rd - 6th January 2018
- The Geographical Association Conference at Sheffield Hallam University on 5th - 7th April 2018

If you live near one of these venues and can help, please email: webmaster@esta-uk.net with the subject **BOARDS**.



Open access to geological memoirs

The BGS publication viewer now includes free access to BGS geological memoirs & regional guides and a wide range of other BGS publications. See what is available at:

<http://www.bgs.ac.uk/data/publications/pubs.cfc?method=viewHome#Accordion2>

There is also a link from the above site to Earthwise (the digital publication channel) that gives access to the outputs of BGS research. This channel aims to promote free exchange of information by the wider geological community.



Quotes of the Day

In science literacy, the main topic of PISA 2015, 15-year-olds in Finland score 531 points compared to an average of 493 points in OECD countries.

Finland has thousands of lakes (about 188,000) and islands (about 179,500) leading to the nickname for the country "Land of the Thousand Lakes".

The population of Finland is about 5,500,000, with a density of 18 inhabitants per sq km, the lowest in the EU.

Finland's national animal the brown bear and its national bird the whooper swan.

Finnish inventions include sauna, ice skates, *Angry Birds*, Linux (computer operating system), Erwise (first Internet browser that had a user interface), disc tumbler lock, heart rate monitor, Molotov cocktail and sound film.

The major industrial minerals mined in Finland are carbonates, apatite and talc.

The oldest rock in Finland identified so far is the Siurua trondhjemite gneiss (ca. 3.5 Ga).

Copper, nickel, cobalt, zinc and lead ores as well as chromium, vanadium and iron deposits are mined in Finland.

In Finland, children do not go to school until the age of 7.

Finland has the most heavy metal bands per capita.

There are no public payphones in Finland.

There's a golf club on the border of Sweden and Finland: half the holes are in one country and half in the other.

There are more saunas than cars in Finland.

In Finland, 9 out of 10 plastic bottles are returned for recycling and almost 100% of glass bottles are also recycled.



Husky dogs - used for herding reindeer and pulling sleds

ESTA NEWS is published biannually.
The next copy deadline is 15th November 2017.