



Bulletin of the North Staffordshire Group of the Geologists' Association Number 117 : January 2017



Winter Lecture Programme 2016/17

Lectures are held in room WS0.06 in the William Smith Building, Keele University

Thursday 26th January 2017 @ 19:30

A Medical Geology perspective of the effect of soil on human health.

Dr Mark Cave (British Geological Survey)

The UK population has an intimate relationship with soil; it is in our gardens, we work with soil, grow our food in soil and many recreational activities take place on soil-based surfaces. Humans, and particularly children, are exposed to soil through inhalation of re-suspended dust, back-tracking of soils into homes, hand to mouth contact in gardens/allotments/play areas and consumption of home-grown vegetables. Ultimately soil is the main sink for pollutants over long periods of time especially in urban environments. It is estimated that humans consume approximately 100mg of soil per day and that within society children are the most vulnerable. This presentation will take a Medical Geology perspective on the relationship between soil and human health.

The committee invites you to join them for a meal at 6pm in the "The Refectory" to entertain the speaker before the lecture. Please make your own booking with the restaurant (01782 734121) mentioning that you wish to join the NSGGA party before 5pm on Tuesday 24 January. There will be a choice of Salmon and King Prawn Pie or Savoury Pancakes filled with Butter Beans & Parsnips.

Thursday 9th February 2017 @ 19:30

Digital Geological Mapping

Leanne Hughes (BGS and Vice-President of the Geologists' Association)

Through two centuries of geological mapping, techniques have evolved from colouring in selected sections of their maps to show the different rocks which lay beneath their feet to today's methods of collecting data to develop the next 3-dimensional generation of geological output. The physical process of mapping remains largely the same but the method of recording the mapped information has changed from a paper process to an entirely digital one. Traditionally the geologist was armed with a 'fieldslip' – with which they would proceed to pencil in the geological lines and



observations as they walked across the terrain. Today however geologists use a tablet PC to record their data. The computer has inbuilt features such as GPS, sketch tool, photograph annotation tool and layers of topographic maps and photographs. The data collected in the field can then be easily converted into whichever format is needed. Often this format will now be a digital, 3D, geological model, as well as a 2D map and spatial data files.

The committee invites you to join them for a meal at 6pm in the "The Refectory" to entertain the speaker before the lecture. Please make your own booking with the restaurant (01782 734121) mentioning that you wish to join the NSGGA party before 5pm on Tuesday 7 February. There will be a choice of Pan Seared Tuna with Chimichurri Sauce or Frittata of Vegetables on Cajun Spiced Pulses and Barley.

Thursday 9th March AGM @ 19:00, Chair's Address @ 19:30

AGM & Chair's Address - Geoengineering

Dr Ian Stimpson (Keele)

The planet's climate is changing. What if electric cars, more wind turbines and recycling plastic bags are not enough to stop global warming? In order to keep within the target of no more than 2°C global temperature rise it is estimated that three-quarters of our discovered fossil fuels will have to stay in the ground.



What if it is already too late? Geoengineering is the engineering approach to dealing with climate change. Can hacking our climate with a little help from geologists save human-kind where green activists are failing? And will they let us?

The AGM will take place at 7pm with the talk beginning at 7:30pm. There is no pre-talk meal.

Thursday 30th March at 19:30 and follow-up field visit (date to be confirmed)

Geological perspectives on the 'world's largest' conventional explosion at Fauld Mine, Staffordshire

Noel Worley

The neglect of Britain's defences during the interwar years resulted in rapid expansion of investment in military infrastructure in the 1930s. The perceived threat of aerial bombardment encouraged the development of concealed storage facilities for military ordnance. During the 1930s the Air Ministry hastily acquired interests in many room and pillar mines throughout Britain with a view to adapting them for ordnance storage operations. Six sites were eventually established, and for one of the northern depots the former Peter Ford gypsum mine at Fauld in north Staffordshire was purchased to become RAF Fauld. The storage facility was progressively expanded and by 1941 had become the RAF's showpiece and the largest in the country known as RAF 21 MU operated by about 1,000 personnel. In early 1944 a detachment United States Air Force personnel was billeted at Fauld for

the storage of 4,000 lb 'blockbuster' bombs and total capacity of the store rose to some 35,000 tonnes of mainly High Explosive ordnance.

On the 27th November 1944 at the height of the allied bombing campaign over Germany over 4,000 tons of HE exploded causing the death of some 70 people. The explosion caused massive damage and left a crater covering 5 ha and 50 metres deep. At the time this was the world's largest explosion and arguably remains the largest ever non-nuclear explosion. The robust design and site geology of the facility allowed the explosion to be contained and was rapidly restored operating until 1966 finally closing in 1973.

Scientific study of the Fauld crater initially concerned its seismicity but later during the 1960's interest was revived in the United States by N.A.S.A. as part of investigations associated with the lunar orbiter mission and the studies of the Fauld crater became highly influential in the development of thinking about the formation of lunar craters.



Aerial photograph of the Fauld crater taken shortly after the explosion in November 1944. The crater is ovoid in shape, covers 5 ha and is almost 300 m across produced by an estimated explosive force of 2,500 tonnes equivalent TNT, about 1/5th the size of the Hiroshima atomic bomb. The ground surrounding the main crater is scarred over a radius of some 800m by secondary impact craters produced by the detonation of bombs and shells that were projected into the air by the force of the initial explosion.

The geological setting of the RAF MU 21 Fauld will be illustrated including some of the difficulties that hampered the underground operations. The site geology was little understood when the facility was developed and it has been recently discovered that the overburden above the mine comprises unconsolidated glacial sediments including 'running sand'. The pattern of damage resulting

from the explosion, formation of associated impact craters, and large number of casualties can now be analysed and explained.

The committee invites you to join them for a meal at 6pm in the "The Refectory" to entertain the speaker before the lecture. Please make your own booking with the restaurant (01782 734121) mentioning that you wish to join the NSGGA party before 5pm on Tuesday 28 March. There will be a choice of Loin of Lamb or Frittata of Vegetables on Cajun Spiced Pulses and Barley.

News

Dr Colin S. Exley 1926-2016

The NSGGA is sad to record the passing of Dr Colin Exley. He was a member from 1952 onwards, a committee member 1952-1985, treasurer from 1964-1968, chair from 1959-1961, 1973-1974 and 1984-1985, and he was made an honorary committee member from 1990.

Educated at Leeds Grammar School, Colin entered the navy as an ordinary seaman in 1943. He served on landing craft and minesweepers during and after the war. After demobilisation he served in the Royal Navy Reserve and retired from service in 1976 as Lieutenant Commander. Post-war he attained a geology degree and then a D.Phil. from Hertford College, Oxford. He then worked at the British Ceramic Research Association until in 1957 he became lecturer in igneous geology at Keele. His main research area was the granites of SW England stemming from his previous work on china clay. He became senior lecturer in 1962, retiring in 1985.



Myers Prize Winners 2016

Two John Myers Awards are presented annually to students at Keele University. John Myers gave a 60-year contribution to the understanding of Geology in North Staffordshire and beyond. His daughter Ann has generously funded the John Myers Awards in his memory.

The Awards and Medals were presented by Ian Stimpson, Chair of NSGGA, at the Keele graduation ceremony in July.

John Myers Bachelors Award and Medal 2016

Winner: Emma Jayne Stockton

Runners-Up: Charlotte Priddy and Daniel Scully

John Myers Masters Award and Medal 2016

Winner: Amy Victoria Regis

Runner-Up: Julia Catherine Bond

Report from Local Groups Meeting 6 November 2016 Burlington House, London.



Colin Prosser the new president of the GA opened proceedings by welcoming representatives of the Local Groups and Affiliated Societies.

Di Clements has had discussions with the Natural History Museum regarding the proposed closure of Earth Lab. There is now some commitment not to close it entirely but move it to a new position possibly outside the BGS

office. It is a valuable asset. Fossils are represented elsewhere in the museum but not rocks.

UNESCO Geoparks are interested in promoting Geo-villages where geology is represented by several periods, designating villages where appropriate. In the UK Martley is considered to be a candidate (Teme Valley). There are 120 Geoparks across the world. However, the UK ones struggle with funding.

In 2017 The GA will run its first symposium for students, both post and undergraduates. This will provide a platform for them to present their work in a friendly and informal setting. The first meeting will be 19th May 2017 Burlington House, Piccadilly, London.

The GA meets with the GSL on a 3-6 monthly basis to establish a working relationship to promote geology and the activities of each group.

Haydon Bailey reported on Geolab. a series of one day events in which the GA provides facilitators for the morning and local groups organise a field trip for the afternoon. The next one will be in February 2017 at Martley with Teme Valley Geological Society. A set of guidelines are available to groups and there is to be one more next year. David Osborn said that East Midlands and the NSGGA would host one at the Stone Centre near Matlock, the second week in October to coincide with Earth Sciences week, was suggested.

SchoolRocks! is a new venture where schools can request a Rock Box containing a selection of rock types that correspond to the GCSE syllabus. A memory stick containing a series of lesson plans is included. A pilot study is being carried out in 25-30 schools in Berkshire. It is hoped to launch it nationally. Anyone wishing to get involved should contact the GA.

Publications. There are 55 pages of local guides (see GA website) that can be accessed on the BGS website "Discovering Geology of Britain".

The proposed closure of Dudley Museum was discussed. The president of the GA has written to the director of the museum but has not had a reply. Graham Worton has said it will be closing by Christmas and relocating to archive offices next to the Black Country Museum. Graham will retain his position. Torquay museum which is also under threat of closure has had a stay of execution. There is a consultation about the future of museums.

The Guardian recently ran an article of women in geology and mentioned the GA had always been a pioneer of equality of women in geology.



We also attended the Festival of Geology on Saturday 7th November at UCL. There were a number of Geological Talks and fossil and mineral displays, stonecraft, books, maps, geological equipment, jewellery. We were able to meet up with other societies who had stands there. In the Discovery Room there were activities for children of all ages with fossil racing trilobites, Jurassic dioramas and more run by Rockwatch.

In the Discovery Room there was also a display of photographs that had been entered into the GA amateur photographic competition showing the entries and winners.

Janet and David Osborn

Spear Phishing

'Phishing' is the fraudulent practice of sending emails in order to induce people to reveal personal information, such as passwords and credit card numbers, online. There is a nasty variant, 'spear phishing', where this targets a specific organisation and the NSSGA has been targeted (unsuccessfully, due to the vigilance of our treasurer). We have also had several members whose e-mail accounts have been hacked.

The NSGGA and its committee will never ask you for electronic bank details or to send money (other than your membership fees in the usual manner!). If you do receive any suspicious emails purporting to be from the NSGGA committee do not click any links or reply sending bank details. If in doubt, please contact the 'sender' by phone to check.

Summer Field Programme 2017

NSGGA Fieldtrip: Assynt & Coigach (NW Highlands Geopark), Scotland

Date: Wednesday 19 April - Thursday 27 April, 2017

Leader: Patrick Cossey



This week-long (7 day / 8 night) excursion will explore some of the world-famous and historically important geosites in the scenically spectacular regions of Assynt and Coigach at the southern end of the NW Highlands Geopark; areas of extraordinary land and seascape beauty that are highly regarded, not only by geologists, but by walkers, wildlife enthusiasts,

photographers and artists alike. Of the 7 days, approximately 5 will be spent on or very close to the coast while the remaining 2 will be spent inland. So, an opportunity not to be missed!

The programme has been carefully tailored to suit those with a range of background knowledge, needs and interests. The week will begin with a brief introductory talk and, in the following days, we plan to see and study the following:

- Precambrian foreland succession marginal to the Caledonian Mountain Belt
- Lewisian gneiss (oldest rocks in Britain) & Scourie dykes
- Torridonian sandstone (incl. oldest fossils in Europe & 'bolide' impact deposits)
- Cambro-Ordovician succession: Basal Quartzite, Pipe Rock, Fucoid Beds, Salterella Grit (Eriboll & An t-Sròn formations) & Durness Group carbonates
- Caledonian structures of the Moine Thrust Belt
- Quaternary landforms and glacial phenomena
- Aspects of landscape management, geoconservation and site interpretation.

Most sites are within a mile or so from roadside car parks / toilets and are easily accessed. The terrain is mostly flat or undulating but variable under foot. What more could you want!

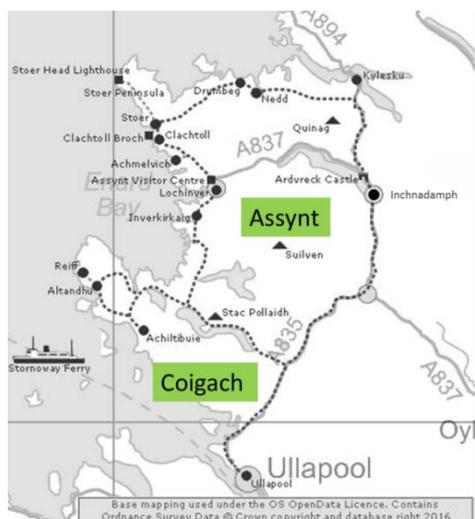
Additional attractions include:

- Some spectacular unconformities, faults, igneous intrusions, sedimentary structures & mineral assemblages
- Awesome scenery (Stac Pollaidh, Suilven, Canisp, Quinag & Ben More Coigach, the Summer Isles & Achnahaird Bay)
- NW Highlands Geopark Visitor Centre & Knockan Crag NNR Info Centre
- The light, the weather and the music (if you are lucky)
- The Rock Route, Pebble Routes, Geotrails, Wee Mad Road & North Coast 500

Accommodation in Assynt (Inchnadamp - 3 nights). A reservation for 16 people has been made at the Inchnadamp Hotel. An all-inclusive discounted package for dinner, bed, breakfast and a packed lunch has been arranged (with vegetarian & diabetic options) at £218.10 pp (payable on leaving on the 22 April).

Accommodation in Coigach (Achiltibuie - 5 nights). You will need to organise, book and pay for your own. Although there are many options (1 hotel, 3 B&Bs, 1 hostel, 1 camp/van-site) most will probably opt for one of the 60 or so **S/C cottage/chalets**. Average price for one that sleeps 4-6 is about £400/800 per week; a good economic option for those willing to share. Most have a Saturday change over day. A list of possible options is available. Most are on the website 'coigach.com'. Guidance can be given if required.

Meals in Coigach (Achiltibuie). Table reservations for the group have been made at the Piping School Café, Coigach Community Hall and the Fuaran Bar for all **evening meals** (x5). You will of course have to organise your own packed lunches and those in S/C accommodation, your breakfast too. There is a good shop locally!



Transport. It is assumed that probably all will be travelling to the area in private vehicles. Some vehicle sharing (at least during the excursion) would be helpful to reduce the chance of any parking issues.

Booking: to book your place on the excursion a cheque for **£75 per person** is required. Note that **an additional £2 per person is required for any 'non-member'** partner or friend attending to cover temporary membership & insurance.

Please complete the '**booking form**' at the end of the bulletin and return it, with your **cheque payable to the 'NSGGA'**, to Dr P.Cossey, 22 Heath End Road, Alsager, Cheshire, ST7 2SQ, by the booking deadline **14 January, 2017. To avoid disappointment please book soon!** Enquiries to Eileen Fraser - Email: fraser@fraserco.co.uk or Tel: 01260 271505 or, Patrick Cossey - Email: patrick.cossey54@gmail.com or Tel: 01270 872002

Membership Reminder

Two motions were passed at the last AGM relating to membership. The first was that the NSGGA annual period of membership will run from October 1st to October 1st, commencing October 1st 2017 to match the academic year rather than the calendar one. To transition to the new annual cycle, the current 2016 membership period will run from January 1st 2016 until September 30th 2017 at no additional charge and **new members joining from January 1st 2017 until September 30th 2017 will receive free membership until September 30th 2017.**

If you haven't renewed your 2016 subscription yet, please do so as soon as possible, remember it will then be valid until October 2017! Please use the form at the end of the bulletin.

The second motion related to student membership. Individual Student Membership will now cover the period from their membership fee payment until the graduation from their academic programme, commencing October 1st 2016.

Other Societies

Geologists' Association

Lectures are held at Geological Society of London, in Burlington House, Piccadilly but the lectures are available to view by members of the GA online via their website.

Friday 6 January @ 18:00 New perspectives on dinosaur diversity and extinction - Professor Paul Upchurch (UCL)

More details at www.geologistsassociation.org.uk

Black Country Geological Society

Indoor meetings are held at Abbey Room at the Dudley Archives, Tipton Road, Dudley, DY1 4SQ. Visitors £1

Monday 16 January 20:00 Volcanics in Costa Rica – Andy Harrison.

Monday 20 February 20:00 The Wren's Nest: The Jewel in Dudley's Crown. - Rob Broadbent.

Monday 20 March 19:30 AGM followed by 'New fossil reptiles from the Triassic of Tanzania' - Richard Butler (Birmingham).

Monday 24 April 20:00 A Teacher's View of Glacial Geology. - David Pannett (Shropshire Geological Society).

More details at www.bcgs.info

East Midlands Geological Society

Indoor meetings are held at the Geography Department (Sir Clive Granger Building) at the University of Nottingham

Saturday 14 January 18:00 The secret life of your mobile phone: metal supply and digital devices – Andrew Bloodworth (BGS).

Saturday 11 February 18:00 Hydrogeology of the Peak District – Vanessa Banks (BGS).

Saturday 11 March 18:00 Swimming Plesiosaurs and flying dinosaurs – vertebrate palaeontology at Wollaton Hall – Adam Smith (Nottingham NHM).

Saturday 8 April 18:00 The Biggest Volcano on Earth - Dr Julie Prytulak, Imperial College, London.

More details at www.emgs.org.uk

East Midlands Regional Group of the Geological Society

De La Beche Conference Suite, British Geological Survey, Keyworth, Nottingham

More details at [www.geolsoc.org.uk/en/Groups and Networks/Regional Groups/East Midlands](http://www.geolsoc.org.uk/en/Groups%20and%20Networks/Regional%20Groups/East%20Midlands)

Liverpool Geological Society

Indoor meetings are held at Lecture Theatre 137, James Parsons Building, Liverpool JMU, Byrom Street, Liverpool, L3 3AF

Tuesday 17 January 19:30 Numbers, models and layered rocks – Peter Burgess (Liverpool).

Tuesday 31 January 19:30 TBC – Rob Duller.

Tuesday 7 February 19:30 Continental Crust Accretion - Hugh Rollinson.

Tuesday 14 February 19:30 Iceland 2016 – Hazel Clark.

Tuesday 7 March 19:30 Volcanic Ash / Meteorology – Helen Dacre.
Tuesday 21 March 19:30 Minerals safeguarding – Alan Thompson.
 More details at liverpoolgeologicalsociety.org

Manchester Geological Association

Indoor meetings are held at the Williamson Building, University of Manchester

Saturday 21 January 13:30 Rare Earth Elements: vital commodities - Prof Frances Wall (Exeter) Dr Richard Shaw (BGS) Suzanne Shaw, (Roskill)
Wednesday 8 February 19:00 AGM & Presidential Address
Wednesday 8 March 18:30 Communications: Seismic Hazard in Istanbul - Prof Iain Stewart (Plymouth) *Venue: Manchester Metropolitan University Brooks Building Faculty*
Wednesday 29 March 19:00 Regionally Important Geological and Geomorphological Sites: assessment criteria and how they are selected - Dr Christine Arkwright

More Details at www.mangeolassoc.org.uk

North West Regional Group of the Geological Society

Indoor meetings at Manchester University unless otherwise specified

More details at [www.geolsoc.org.uk/en/Groups and Networks/Regional Groups/North West](http://www.geolsoc.org.uk/en/Groups%20and%20Networks/Regional%20Groups/North%20West)

Shropshire Geological Society

Indoor meetings are held at The Shire Hall, Shrewsbury. Small charge for visitors.

Wednesday 11 January 19:30 Fossils in Shropshire digitisation project - Daniel Lockett and Jackie Tweddle
Wednesday 8 February 19:30 Borehole logging and video surveys – Kim Beesley
Wednesday 8 March 19:30 Igneous processes – Paul Oliver
 More details at www.shropshiregeology.org.uk/SGS/SGSintro.html

Teme Valley Geological Society

Indoor meetings are held at Martley Memorial Hall B4197 by Sports Ground

Wednesday 25 April PM Teme Valley Field Trip – Prof. Ian Fairchild
 More details at www.geo-village.eu

Warwickshire Geological Conservation Group

Indoor meetings are held at St Francis Church Hall, Warwick Road, Kenilworth CV8 1HL. Visitors £2.

Wednesday 18 January 19:30 The volcano that changed the World: Tambora and the great eruption in 1815 - Dr. Ralf Gertisser (Keele University).
Wednesday 15 February 19:30 The Earth after Us - Jan Zalasciewicz (Leicester) *Venue: Kenilworth Senior Citizen's Centre*
Wednesday 15 March 19:30 The Corsi Collection of decorative stones: where science meets the arts - Dr. Monica Price (Oxford University Museum of Natural History)

Wednesday 15 March 19:30

New insights into old fossils: the Ediacaran biotas of Charnwood Forest and Newfoundland - Dr. Phil Wilby (BGS).

More details at www.wgcg.co.uk

West Midlands Regional Group of the Geological Society

Indoor meetings are held at The Earth Imaging Laboratory, University of Birmingham

Tuesday 12 January 18:30

Eurocode 7: A Time of Change - Professor David Norbury (David Norbury Ltd)

Tuesday 12 April 18:30

A Rock Slope Stability Case Study Coles Quarry, Backwell (revisited) - Richard Small (Minerals Consulting Services) Venue: Atkins (The Axis) Birmingham – Registration required

More details at [www.geolsoc.org.uk/en/Groups and Networks/Regional Groups/West Midlands](http://www.geolsoc.org.uk/en/Groups%20and%20Networks/Regional%20Groups/West%20Midlands)

Western Institute of Mining and Minerals

Indoor meetings are held at the William Smith Building, Keele University

Monday 6 February 19:00

Driving a new surface drift for Irish Salt Mining and Exploration Ltd, Carrickfergus, Northern Ireland - Wynne Griffiths (Alan Auld Engineering)

Monday 6 March 19:00

Using geological and geochemical surveys to assess the vulnerability of Fen habitats to quarrying in the Peak District- Alex Gallagher – (Wardell Armstrong).

Monday 27 March 19:00

A Geological & Law Enforcement (Police) Search Strategy for Ground Burials Associated with Homicide, Terrorism and Organised Crime - Dr. Laurance Donnelly (Arup).

More details at www.iom3.org/wimm

NSGGA - Next Committee Meeting:

Thursday 19 January, 2017 @ 19:00

In room WS1.44, the William Smith Building, Keele University

Contacts List: NSGGA Committee 2016-17

Chairman: Dr Ian Stimpson,

Geography, Geology & the Environment, Keele University Tel. 01782 733182

e-mail: i.g.stimpson@keele.ac.uk

Vice-Chairman: Dr Stuart Egan

Geography, Geology & the Environment, Keele University Tel. 01782 733174

e-mail: s.s.egan@keele.ac.uk

General Secretary: Barbara Kleiser,

email: barbara.kleiser@gmail.com

Treasurer: Tony Marks,

4 Scarratt Drive, Forsbrook, Stoke-on-Trent, ST11 9AN

email: welsh_tony@tiscali.co.uk

Membership Secretary: David Osborn,

Stretton, 2 Croyde Place, Meir Park, Stoke-on-Trent, ST3 7XD. Tel 01782 396692

email: david.d.osborn25@gmail.com

Speakers Secretary: Peter Jones,

e-mail: p.f.jones@derby.ac.uk

Field Secretary: Steve Alcock

Longfields, Park Lane, Cheddleton, near Leek ST13 7J

Tel. 01538 360431 or mobile 07711 501028

e-mail: steves261@aol.com

GeoConservation Staffordshire Liaison Officer: Dr Ian Stimpson,

e-mail: i.g.stimpson@keele.ac.uk

Bulletin Secretary: Dr Ian Stimpson,

e-mail: i.g.stimpson@keele.ac.uk

Honorary Life Member: Ann Myatt

Executive Committee (honorary):

Terry Jones.

Executive Committee (elected):

Dr Lloyd Boardman; Dr Patrick Cossey; Janet Osborn (Minutes Secretary); John Reynolds

Executive Committee (co-opted):

Don Steward, Diane Lawrence (John Myers Awards); Amy Elson (Keele GeoSoc).

NSGGA web pages: www.esci.keele.ac.uk/nsgga

NSGGA Fieldtrip: Assynt & Coigach (NW Highlands Geopark), Scotland
Wednesday 19th to Thursday 27th April, 2017
Leader: Patrick Cossey

I/We wish to book ____ place/s for the excursion and enclose the appropriate booking fee, a cheque made payable to NSGGA for ____ . The booking fee (£75 pp) is to cover administration costs / leader's expenses only. Please add an additional £2 pp to the booking fee for **any 'non-member'** partner or friend attending; this to cover their **temporary** membership & insurance for the duration of the excursion. **Please send your completed form and cheque to P. Cossey, 22 Heath End Road, Alsager, Stoke-on-Trent, ST7 2SQ asap & by 14 January 2017 (the booking deadline) at the latest.**

NAME (S)_____

ADDRESS_____

E-MAIL_____ Tel:_____ (day) _____ (mobile)

Accommodation in Assynt - Inchnadampn Hotel (3 nights - 19th, 20th and 21st April – D,B&B,PL)
 Hotel booking made for 16 people. Cost - £72.70 pppn based on discount for at least 10 people staying. There is no single person supplement for the occupation of any room.

- Double or twin room (please specify preference).....
- Single room or sole occupancy of twin room
- Are you willing to share a room..... YES/NO
- Special dietary requirements

Transport

- I will be coming by car and willing to offerplaces during the trip
- Would you be willing to give someone a lift to the area?YES/NO

Accommodation in Coigach (Achiltibuie area). Please book your own at Achiltibuie, asap, for the nights of Saturday 22nd to Wednesday 26th April 2017 (5 nights). You may wish to book longer and stay in the area for a few more days. Table reservations for evening meals at various establishments in Achiltibuie have been pre-booked. Meals will be at a reasonable cost.

- Would you be willing to share a cottage with someone while in Achiltibuie? ... YES/NO

Emergency contact telephone number while away.....

I understand that the booking will secure my reservation at the Inchnadampn Hotel (19th, 20th and 21st April 2017) and that I am to make my own accommodation arrangements in Coigach (Achiltibuie) for the 5 nights from Saturday 22nd to Wednesday 26th April 2017 (inclusive). The fieldtrip finishes on Thursday 27th April 2017.

Signed.....

NSGGA MEMBERSHIP**NEW MEMBERS - FREE MEMBERSHIP UNTIL September 30 2017!****(excludes student membership – just £3 for the duration of your course)**

Fossils, Rocks & Minerals
 Summer Field-Trips
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Would you be willing to receive your Bulletins by e-mail yes no

Ordinary (Full)	£13.00	<input type="checkbox"/>
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Retired/Unemployed	£10.00	<input type="checkbox"/>
Student **	£ 3.00	<input type="checkbox"/>

John Myers Award Fund*** contribution of £.....

* For insurance purposes, please list the names of all members of the household to be included:

** Student membership is valid for duration of course so please name your course:

.....

Cheques should be made payable to the: "**NSGGA**" and sent to:

David Osborn (NSGGA Membership Secretary),

Stretton, 2 Croyde Place, Meir Park, Stoke-on-Trent, ST3 7XD.

Tel: 01782 396692. e-mail: david.d.osborn25@gmail.com

For our records, are you currently a member of the national GA ? yes no

*** Two John Myers Awards are presented annually to students at Keele University. John Myers gave a 60-year contribution to the understanding of Geology in North Staffordshire and beyond. From 1927 he taught at Wolstanton Grammar School for 40 years and began evening classes at "Stoke Tech" [now Staffordshire University], encouraging members to join the Geologists' Association of London. Thus was born the NSGGA in 1948. In the 1950s and 60s he helped Keele University Postgraduate Certificate of Education students with a teaching methods course, joining the staff of the Education Department in 1967 on his retirement from teaching. Also in 1967, he was a Founding Father of the Association of Teachers of Geology that had its inaugural meeting at Keele, at which he was elected Treasurer, a post he held for 10 years. His daughter Ann has generously funded the John Myers Awards in his memory.