



MANCHESTER GEOLOGICAL ASSOCIATION

President: Dr Ray Burgess

Founded 1925

Date June 2014

www.mangeolassoc.org.uk

Welcome to the June edition of the Manchester Geological Association's Newsletter. No "Lord Kitchener Needs You" poster this month although the Council is still looking for people to join them.

It does seem as if summer has arrived (well it's raining as I write this) with gardens growing well and birds nesting. There are plenty of lambs in the fields and, as ever, luxuriant undergrowth is growing all over wonderful rock exposures!!

By the time you read this at least two of our field events will have taken place. But that still leaves others including a trip to Formby with the OUGS North West branch in September. The Formby trip is bound to be popular so make sure you book your place early to avoid disappointment.

As Editor of the Newsletter, I am looking for your input - just like James. So, please do offer to write trip reports, send me your book reviews, your holiday photos, interesting websites that you have found - anything of a geological interest. It's YOUR newsletter so it should be filled with YOUR stuff, not just what the Editor likes!!

Copy for the September Newsletter by 25 August. Please could you send photos separately to any text. Please do not embed photos within the text.

Thanks very much and have a good summer!!

NEWSLETTER EDITOR
AKA THE HOUSE ELF

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QUICK DIARY

Sun 21 September: Formby: Joint trip with OUGS NW led by Steve Suggitt and Alison Burns

Sat 4 October: Vernon Park and Poise Brook led by Paul Aplin

Wed 15 October: Indoor Meeting: Dinosaur Diversity in the British Isles: Dean Lomax

MGA NEWS

HURRAH: WE HAVE A NEW OUTDOOR EVENTS ORGANISER!!

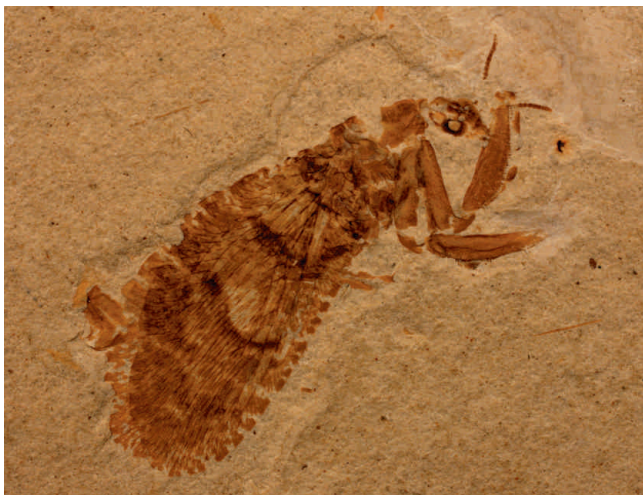
The MGA Council is very pleased to announce that PENNY HEYWORTH has kindly agreed to take over the position of Outdoor Events Organiser for the rest of the summer, pending being formally appointed at the next AGM in 2015. Penny's partner is Peter Giles who is your very able Web Master and Penny has attended several field trips over the last few years.

Whilst this year's trips are pretty much arranged, if you have any suggestions for places you would like field trips to go, please let her know at outdoors@mangeolassoc.org.uk. She, as Jane before her, will be very happy to receive suggestions.

Two Successes for James Jepson

Council Member (and former Newsletter Editor) James Jepson has plenty to celebrate just at the moment. After completing his work in Cardiff, he has obtained a 2 year Humboldt Fellowship starting in October in the Entomology department at the Museum für Naturkunde in Berlin. Prior to that, he is doing a 2 month language course as part of the fellowship, so he will start that in August, when he will leave Manchester and our Council.

His research topic is "The Evolutionary History of Mantispidae (Insecta, Neuroptera): A Cladistic Study", under the supervision of Dr Michael Ohl. He will be looking at resolving the phylogenetic relationships of fossil mantispids with the extant taxa - so essentially he will be working on both fossil and extant specimens. He is also looking at evolutionary history of mantispids looking at the origin, diversification, and response to climate and environmental change - from the Jurassic to the present day.



James et al. have recently described a fossil mantispid (Jepson, J.E., Heads, S.W., Makarkin, V.N. and Ren, D., 2013. New fossil mantidflies (Insecta: Neuroptera: Mantispidae) from the Mesozoic of China, *Palaeontology*, 56(3), pp 603-613) from the Cretaceous of China, which he named after our own Dr John Nudds - *Archaeodrepanicus nuddsi*. So hurrah for James and his colleagues and our own John Nudds for having it named after him - not that we're saying it looks anything like JN!! The currently extant equivalent looks a bit like a Praying Mantis.

So **GOOD LUCK JAMES**, thanks for all your work on the Council and *auf wiedersehen*: don't forget to come and see us when you're back in the UK!!

And goodbye to Lisa Jepson who is going with James at the end of July. **GOOD LUCK AND THANKS** for your work on the Council.

ARTICLES

Launch of 100 Great Geosites!

The UK and Ireland features some of the most diverse and beautiful geology in the world, spanning most of geological time, from the oldest Pre-Cambrian rocks to the youngest Quaternary sediments. As part of Earth Science Week 2014, The Geological Society and partner organisations are celebrating this unique geo-heritage by launching a list of 100 Great Geosites across the UK and Ireland.

The Geol Soc needs your help!

To come up with a list, they need your help. Send them your favourites via Twitter, using #100geosites, on the project's Facebook page at www.facebook.com/100geosites, or by emailing 100geosites@geolsoc.org.uk. You can support your nomination with anything you like – be it photographs, videos or enthusiastic words. You can find all of this information and more on the webpage www.geolsoc.org.uk/100geosites.

A geosite could be a classic outcrop or a beautiful landscape like the Giant's Causeway. The list could also include engineered sites of economic importance such as a Crossrail station, museums, structures featuring striking building stones or sites of significance to the history of geology or our industrial heritage. The only rules are that the site is in the UK or Ireland, and can be visited by the public. They're hoping that, as well as the classic geological sites the UK and Ireland is famous for, they'll receive some surprises!

The list will be launched in October 2014 for Earth Science Week (13 – 19 October). They hope the final list of 100 will reflect the huge range of geological sites that can be visited in the UK and Ireland – from the countryside to the hearts of our towns and cities.

Earth Science Week 2014 is taking place on 13-19 October, with a theme of 'our geo-heritage.' As well as the 100 geosites project, they're keen to hear from anyone who would like to propose an event as part of the week. From geowalks to public lectures to educational activities, all ideas are welcome – email ESWUK@geolsoc.org.uk or visit www.geolsoc.org.uk/earthscienceweek to find out more.

North Staffs GA Field Events

Thursday 26 June 2014 : Evening Field Trip of the Geology of Keele

Leader: Ian Stimpson.

Meet at 7pm Outside the William Smith Building on Keele Campus.

Saturday 13 September at 11am : Scunthorpe

Leader: Paul Hildreth Booking deadline: July 9.

Meet at Scunthorpe Museum (Sign posted).

Enquiries regarding field trips should be addressed to: Steve Alcock, 01538 360431 or 07711 501028. Email: steves261@aol.com

26th May to 31st August

What's On!



GeoFest 2014

Guided Walks, Tours, Children's Activities, Field Trips, Talks, Exhibitions and much more - highlighting and celebrating the Abberley and Malvern Hills Geopark

Pick up a programme or visit
www.Geopark.org.uk for further details

GeoFest 2014 is sponsored by



Petroleum Exploration Society of Great Britain
www.pesgb.org.uk



**SADDLEWORTH MUSEUM,
OLDHAM GEOLOGICAL SOCIETY
AND EYE OPENER EXPERIENCES**

in association with

ROCKWATCH

invite you to join our family fun day of

**GIANT INSECTS
AND OTHER
AMAZING FOSSILS**

on Saturday 21st June 2014

from 11.00am to 3.30pm

at

Saddleworth Museum, High Street, Uppermill,
Oldham OL3 6HS

tel: 01457 874093

e-mail: curator@saddleworthmuseum.co.uk

COST: £2.50 PER CHILD

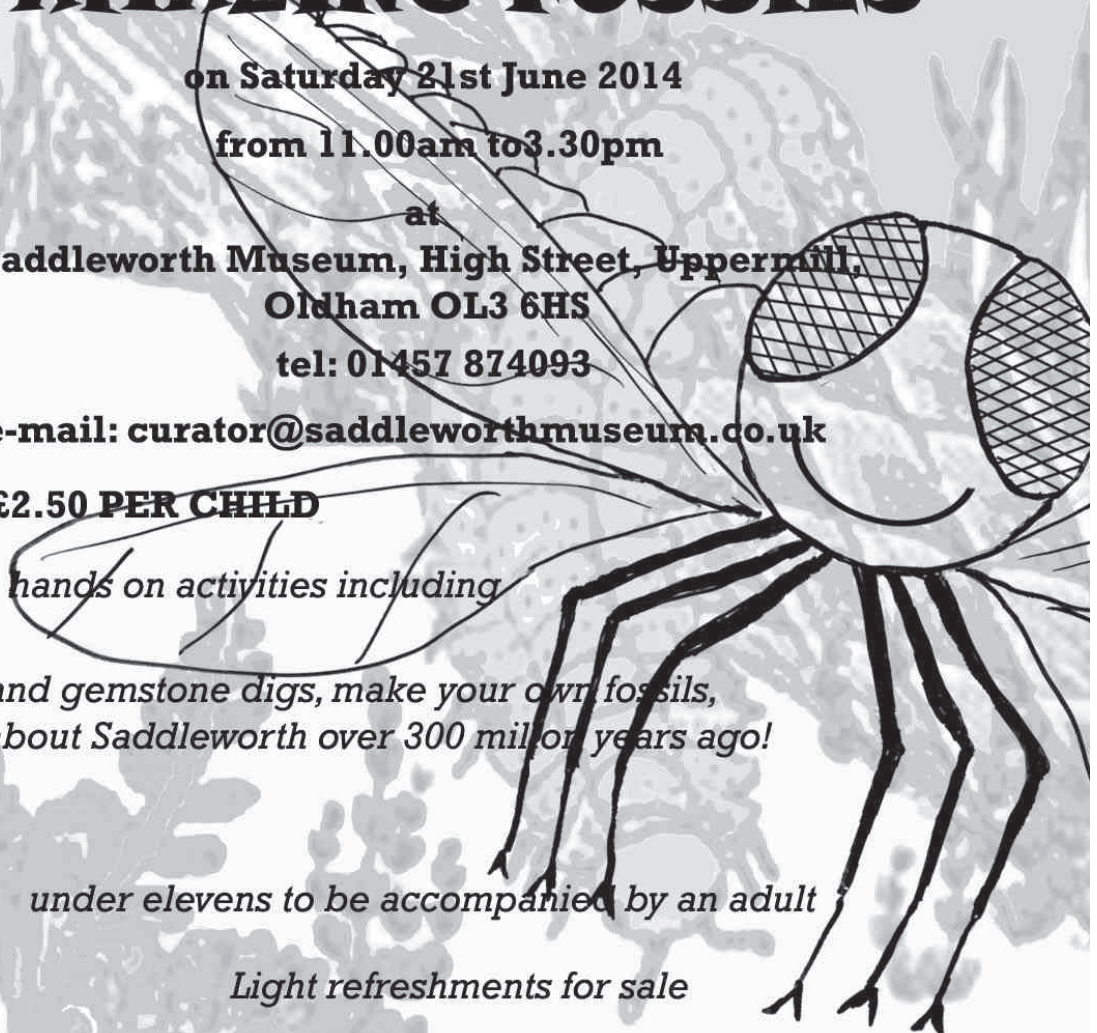
hands on activities including

*fossil and gemstone digs, make your own fossils,
find out about Saddleworth over 300 million years ago!*

under elevens to be accompanied by an adult

Light refreshments for sale

In aid of Saddleworth Museum's Heritage Lottery bid



White Peak Walkabout

On 12 April 2014, the first field event of the year, Eileen Fraser led 18 members and visitors on a trip to Headstone Cutting on the Monsal Trail and Hobs House which lies just above the trail. We gathered at the Monsal Head hotel car park looking down over the valley.

She explained that the area in front of us was geologically in the Carboniferous: near the equator at the time it was formed. The trail follows the 15km Wye Valley. The River Wye rises in the Namurian (old names used but new nomenclature explained) Millstone Grits above Buxton and follows the Dinantian limestones through the valley. It crosses the anticline at the point where the Woo Dale Limestone Beds meets the Trail. Boreholes have shown Ordovician rocks at 270m (very steep volcanics with a rubbly top indicated exposure and erosion at some stage). At Calden Low, the Ordovician is at 350m and at Eyam, there is no Ordovician until 1800m (this appears to be a faulted block with thick limestones). Faults in the area were reactivated which has resulted in mineralisation when hot briny conditions from localised Lower Carboniferous volcanics occurred. The Derbyshire Dome faults trend NW/SE with the mineralisation following this. The Red Rock Fault which goes through Macclesfield divides the Carboniferous from the Triassic rocks of the Cheshire Basin.

The railway line follows the valley at a higher level over bridges and through a series of tunnels cutting the limestones. It was closed in the 1960s and the track removed with tunnels closed. However, two years ago after renovation, the tunnels were reopened and the Monsal Trail walking/cycling path was opened: the tunnels are well lit until sunset. Eileen explained that the Tunstead Quarry limestones (near Buxton) are 99% pure and is quarried while the Monsal Trail Limestones are not so pure.

Our first locality was in a field on the way from Little Longstone to the Trail. Here we could interpret the mudstone/limestone boundary – this is an unconformity between the Lower Carboniferous and the Namurian shales. It was noticeable that streams were seen on one side of the track representing mudstones (spring line) with limestones on the other side. There is an east dip of just over 5° with shales onlapping – a form of Yoredale sequence, representing changes in environment. We were looking for the brachiopod *Spirifer* in the limestone and *Goniatites granosus* in the grey shales. The shales, Eileen told us, are terrigenous and deposited in deep, probably anoxic, water as part of a ramp facies. The fossils were then washed into the muds. (Photo 2)

We walked along the trail looking at how the landscaped change until we reached Headstone Cutting. This is one of the tunnels built in the 1860s and is high up in the Dinantian sequence. There is a series of thinly bedded limestones with chert and shale partings which thicken to the east. Eileen explained these are the Ashford Beds and are the highest in the Wye section and Dinantian. There appeared to be minor folding and some indication of slumping. (Photo 3)



Photo 1 (L):
Wye Valley

Photo 2 (R):
Eileen explains
what we are
looking at





Photo 3 (L):
Examples of
gentle folding



Photo 4 (R):
Chert bands

We discussed changes in the environment. Also the question of what might be 'missing': time gaps but of what length. There had been some sub-aerial volcanism which had resulted in ash wayboards – very thin laminations. Further down the succession, there are chert bands varying in thickness from a few millimetres to maybe 10 cm (Photo 4). Eileen outlined the possible methods of formation for chert including silica-based gel which solidifies and nucleation round organic fragments. The silica is thought to have some from shells such as sponges.

When crushed the chert assists in whitening pottery and so the rock was quarried and taken to the Potteries first by canal and then by rail. The limestone is used in agriculture – there are several lime kilns in the area.

As we walked through the cutting, a change in dip was noticed. Slickensides could be seen, the rock also appeared mashed up. Mineral veining has filled the faults. The rocks appeared red but this was soon proved to be 21st century algal in origin. We could actually see where the Putwell Hill rake went into the hill (Photo 5). Fluorspar and lead were mined and the Monsaldale spar was made into house paint. We also found coral fossils (Photo 6).



Photo 5 (L): Fault
going into Putwell
Hill



Photo 6 (R):
Solitary coral

We continued along the trail looking for fossils in the cuttings. After lunch we returned to the viaduct under the Monsal Head Hotel and went down to the river, crossing it and then rose up a steep path to Hobs House (Photo 7 (L)). Hobs House is a large limestone exposure which is part of a landslide. The exposure contained corals (Photo 8 (R)), chert and brachiopod remains.

We returned to the Hotel through beautiful woodlands full of spring flowers. Eileen's trip had been very informative and we had learned a lot about the locality and the industrial heritage of this area of the Peak District.



Photo 7 (L): Hobs House

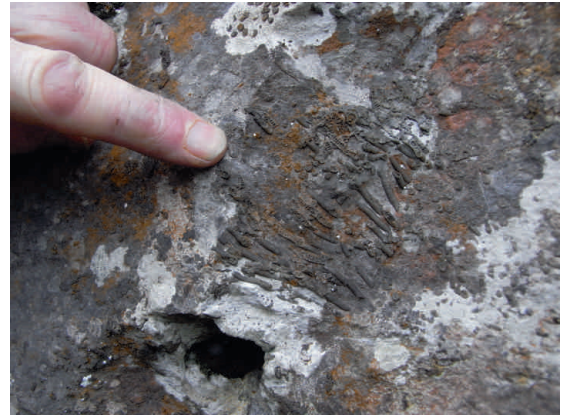


Photo 8 (R): Colonial coral

Geo Web Watch

Most of us have access to the web either via our own computer or using our local library. There are many geo-themed websites out there and so your Editor thought it might be useful to highlight some of these each quarter.

If you have any favourite sites which you use, please let me know via newsletter@mangeolassoc.org.uk and I'll be pleased to include them next time.

British Geological Survey is Britain's 'Gateway to the Earth' and a good place to visit for all sorts of reasons. You can find out about local earthquakes and report whether and what you felt if you were involved. You can download their brilliant and free, iGeology app for your mobile phone which enables you to 'see' the basic geology of anywhere in the UK – you don't need to be 'there', a post code will do but if you're on holiday and not 100% sure of what you're looking at, it is very useful. And of course you can buy maps and books via the website. You can also follow them on Twitter and Facebook.

Website: <http://www.bgs.ac.uk/>

Twitter: @BritGeoSurvey

Facebook: <https://www.facebook.com/BritishGeologicalSurvey>

The **US Geological Service**, the American equivalent of the BGS, is a very good place to start to find out about earthquakes and volcanoes worldwide. Even a cursory glance at the home page makes one realise how many large (greater than Magnitude 5) earthquakes happen worldwide every day!! Like the BGS site there is a huge amount of educational information available on the site and next time, I will feature what you can find out about individual earthquakes and volcanoes. Meanwhile, have a look for yourself.

Website: <http://www.usgs.gov/>

Facebook: <https://www.facebook.com/USGeologicalSurvey>

Twitter: @USGS.

Where In the World

This is a new feature: have a look at the photos below and see if you know or can guess 'where in the world' they are - and what they are too!

These are your Editor's photos this issue but I do hope you will send your pictures for inclusion in the next edition.

Answers can be found on Page 12.



A

B



C

D



INDOOR MEETINGS 2014-2015

Wednesday 15th October 2014 – Dinosaur Diversity in the British Isles
Dean Lomax, Doncaster Museum and Art Gallery

Saturday 15th November 2014 – The Zechstein Evaporites
Eden Valley Deposits – Dr Noel Worley, Yorkshire Geological Society and others

Saturday 6th December 2014 – Ophiolite Suites
Ophiolites and Accretion Models for the Oceanic Crust
Dr Johan Lissenberg, University of Cardiff
Memories of Ocean Basin Opening and Closing preserved in Ophiolite Peridotites
Dr Brian O'Driscoll, University of Keele
Why the Oman Ophiolite did not form at a Mid-Ocean Ridge, Professor Hugh Rollinson,
University of Derby

Saturday 17th January 2015 – The Broadhurst Lectures
The Mineral World
Minerals and Gems of the Cairngorms – Roy Starkey, The Russell Society
From Fluorite to Fluid Flow: an exploration of some iconic Northern Pennine
Minerals – Dr Brian Young, Honorary Research Fellow, University of Durham
The World Class Copper Deposits of Chile - Geology, Exploration and Discovery
Dr. Chris Carlon, Mineral Industry Consultant
+ other speakers to be advised in due course

Wednesday 11th February 2015 – Evolution of the Mars Atmosphere and Hydrosphere
AGM followed by Presidential Address
Dr Ray Burgess, University of Manchester

Wednesday 4th March 2015 – Coastal Dunes and Climate Change
Dr Paul Rooney, Liverpool Hope University
Joint Meeting with the Geographical Association, 6.30pm

BOOK REVIEW

An Introduction to Forensic Geoscience by Elisa Bergslien

Published by Wiley-Blackwell (ISBN 978-1-40516-054-4; paperback, £37.50)

Being an avid watcher of the TV series CSI, NCIS and Body of Proof, this book grabbed my attention as soon as I received it and I decided that I would be the one to review it. And I have enjoyed it. Elisa Bergslien PhD is Associate Professor at Buffalo State College, New York, and as such the book has been written very much with American students in mind. However, she is also aware of a wider audience to which it would appeal and many of the examples she quotes come from Britain.

It is a hefty tome — more than 500 pages. The book is Quarto size (smaller than A4). Being printed on shiny paper, it can be a bit difficult to read in the 'wrong' light. There are three 'Indices': Lists of Tables and Figures, Colour Plates and Cases, in addition to a thorough List of Contents. These are at the start and there is a General Index at the back. Nevertheless, it is a fascinating read.

BOOK REVIEWS

continued

Elisa starts with a brief history of forensic science and crime scene basics. Then a further 10 chapters follow on minerals, rocks, maps, gemstones, sand, soil and fossils. She has included a chapter on the Geology of Art — helpful in proving forgeries. The final two chapters cover 'Forensic Anthropology' and Archeology', and 'Environmental Forensics', describing how to track pollution to its source.

Each chapter begins by explaining why a forensic geoscientist might need this information (e.g. art fraud, The Great Diamond Hoax), followed by the 'technicals' of the subject (e.g. what hardness in a mineral means, how to measure it, how it helps identification). Each chapter ends with a summary, a suggested further reading list and a list of references.

While I have no intention of becoming a forensic geoscientist, I found this book to be an excellent revision for basic geology — Elisa has aimed it not just at geology students but for any forensic scientist. Sometimes, I had to think carefully about what she meant when 'Americanisms' are used — but that's good from my point of view. In that respect it has given me an insight into how things are viewed 'over the Pond'. I probably wouldn't have gone out to buy this book but I am really glad I've read it: some of the cases Elisa has quoted are fascinating!

— Jane A Michael BSc (Hons) Open (Natural Sciences with Earth Sciences)

MANCHESTER GEOLOGICAL ASSOCIATION Council 2013-2014

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Indoor Meetings Secretary: Vacant

Field Meetings Secretary: **PENNY HEYWORTH**

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For **General queries** - info@mangeolassoc.org.uk

OTHER SOCIETIES AND EVENTS

Black Country Geological Society (www.bcgs.info):

Contact: Andrew Harrison –
andrew_harrison@urscorp.com

Cumberland Geological Society (<http://www.cumberland-geol-soc.org.uk/>)

Lancashire Geological Association (www.lancashiregeologists.co.uk):

Contact: Jennifer Rhodes – s_j_rhodes@hotmail.com

Leeds Geological Association (www.leedsgeolassoc.freeserve.co.uk):

Contact: Anthea Brigstocke –
anthea.brigstocke@zen.co.uk

Liverpool Geological Society (www.liverpoolgeologicalsociety.org.uk):

Contact: Joe Crossley – 0151 426 1324

North Staffs Geological Association (www.esci.keele.ac.uk/nsgga):

Contact: Eileen Fraser – frasers@netfraser.me

Oldham Geological Society:

Contact: Jo Holt – 01457 874 095

Open University Geological Society North West Branch (www.ougs.org/index.php?branchcode=nwe):

Contact: Jane Schollick – 01704 565 751

Russell Society (Mineralogy) (<http://www.russellsoc.org/nwbranch.html>):

Contacts: Alan Dyer – Aldilp@aol.com or Harry Critchley – 01204 694 345

The Manchester Museum:

Website: <http://www.museum.manchester.ac.uk/whatson>

Wilmslow Guild (www.wilmslowguild.wikidot.com):

Contact: Wilmslow Guild 01625 523903

Answers to 'Where in the World'

A: Above Fabreges in the French Pyrenees - picture taken from Le Petit Train

B: Jersey: North Coast

C: Indian Himalaya: Approach to Kanchenjunga from Sikkim side

D: Sella Ronda: Dolomites, Northern Italy

STOP PRESS

Event at The Manchester Museum: Museum Meets Urban Naturalist

Urban naturalist is a programme of friendly practical workshops for adults run by leading naturalists. From wild food-foraging and composting to bird song and insect identification, explore biodiversity on our doorstep.

Saturday 28 June 2 - 4pm Geology Garden

£3 - book on 0161 275 2648 or
museum@manchester.ac.uk

Manchester Geological Association
members are welcome guests at other
societies' events

For more details on any of the societies
listed please check their websites