

Newsletter, January 2017

UPCOMING EVENTS

This Friday

20th January 2017

The Wilson Cycle in the North Atlantic

Dr. Christian Schiffer, Dept. Earth Sciences,
Durham University

Joint NEGS / YGS Meeting

Saturday 28th Jan 2017, 2 to 5 pm

North Atlantic - from Origin to Energy

Arthur Holmes Lecture Theatre, Science Site,
University of Durham.

NEGS is pleased to announce a joint half-day meeting, to be held in conjunction with the Yorkshire Geological Society. The topic will address different aspects of North Atlantic geology, from initial opening through to controls on the hosting of major energy resources.

Arthur Holmes Lecture Theatre, Science Site,
University of Durham

Programme

14.00 Introduction and Society business.

Dr Andrew Howard, President YGS

14.10 The North Atlantic: Exceptional, or the Rule?

Gillian R. Foulger and the North Atlantic Working Group,
Dept Earth Sciences, Durham University, Durham, U.K.

14.50 The Wilson Cycle Origin of the Jan Mayen Microplate

Christian Schiffer , Alex Peace, Jordan Phethean, Laurent Gernigon, Kenni Petersen, Ken McCaffrey, Gillian R. Foulger

15.20 Break, with coffee, tea and juice

15.40 Arctic- Atlantic break-up stages, and their control on petroleum systems and resources

Prof. Tony Doré of Statoil

16.20 Two geophysical things from Europe (Scotland and Denmark) that tell us something about Iceland and the opening of the North Atlantic

Randell Stephenson
School of Geosciences, University of Aberdeen, Aberdeen, Scotland

16.50 Discussion and final remarks.

LECTURE REPORTS

Members Evening in December was well attended by members wishing to hear Chairperson, **Gordon Liddle** talk about his trip, with member **Paul Newton**, to southern France to check out the possibility of a NEGS field trip to the active Volcanics in the Bedarieux area. Paul was unable to come so Gordon presented all of the information himself, telling us of the nature of these tertiary volcanic and the locations visited to explore these.

A short flight from Edinburgh took them to the area. The geology started with the Gorge d'Heric, an area of high grade metamorphic material with a granite pluton devoid of iron minerals. The area is interpreted as forming at the base of the crust.

The main excursions were in the Bedarieux region exploring the Lodeve-Bedarieux basin which has accumulated vast deposits of Permian and Triassic sediments. The bright red Permian are locally termed Roffe, a fine silt with rich haematite coated grains. Many exposures had calcareous layers with minor rippling suggesting a temporary lake in the interior of the hot Permian landmass. Dinosaur footprints were studied by the roadside!

An angular unconformity to Triassic pebbly sandstones indicated a changing environment. Jurassic rocks are scarce in the area with small black shales the dominant facies. Cretaceous rocks form massive gorges, escarpments and plateau creating a distinctive and attractive landscape.

The attraction however was the recent volcanic activity. About 20 cones are in the area indicating repeated but minor eruptions that penetrated the sediments in spectacular

style. The cone at one site had side vents and dykes that had rotated and cracked as the eruption developed. The basalt flows were extensive but erosion of the very weak Permian sediments has allowed large scale erosion to occur.

The basalt contains abundant peridotite clasts indicating an upper mantle influence on the magma. The presence of Permian, Triassic and Cretaceous clasts in the cone deposits confirmed, very colourfully the rocks that the volcanoes had passed through.

Glaciation in recent times has produced a lot of scree slopes and deposits of till.

The area was an excellent field location with abundant exposures that allowed the essential conditions and sequence to be interpreted. Gordon also told us of the costs – cheap flights, good rates for hotel and car hire meant that the intrepid explorers splashed out on some of the wonderful food of this region. Anyone interested in a field trip?

Mavis Gill gave the second presentation, showing some excellent pictures of a recent visit to Greenland. Mavis had captured much of the geology around Scoresby Sund, the large fjord system which is the single largest ice outlet in East Greenland. The almost 3 billion year span of varied Earth history around this area of the east coast was shown in a clearly coloured diagram, illustrated by her own photographs and description of what she had seen.

Both speakers answered questions from members and were thanked by a good round of applause before the Xmas socialising took place.

BOOK REVIEWS

TOOLS OF THE TRADE: The Sedgwick Museum's Historical Collection of Geological Hammers

Douglas Palmer

Published by The Sedgwick Museum,
Cambridge, 2016

ISBN 978-0-9927270-1-7

Price £7.50

In recent years it has become fashionable in some rather extreme conservation circles to find the carrying, let alone use, of a geological hammer decried as some form of moral outrage. Yet this surely remains the essential tool of the field geologist without which meaningful field research is simply impossible. How refreshing it is therefore to see this most elementary yet fundamental scientific instrument celebrated in Douglas Palmer's short and attractively presented book. Written to accompany a small exhibition of the museum's fine collection of hammers owned by some of this country's most eminent geologists, it also offers some wonderful insights into those individuals and their work.

Some of us who unashamedly continue to use geological hammers perhaps have never paused to reflect seriously on this simple 'tool of the trade, though those of us of a particular vintage might still lament the passing of the beautifully crafted British 'Cutrock' brand hammers then so widely used, and which feature prominently as the

scale in countless classic Geological Survey, and other, photographs.

Following a short outline of the evolution of the geological hammer the book goes on to discuss its adoption as a universal symbol or trademark of the science ('the bretheren of the hammer') in the logos of geological societies and institutions the world over. The bulk of the book is devoted to illustrations of a quite remarkable variety of hammers owned and used by eminent British geologists, many associated with Cambridge University. Whilst it is perhaps a little difficult to consider any one hammer as being the sole tool of any one individual – as a professional field geologist of around 50 years standing I've worn out and discarded quite a few – it is nevertheless fascinating to see the variety of styles used, including many custom-made examples.

However, this book is rather more than merely a celebration of odd hammers. A handful of photographs of late 19th century geology students - gentlemen in suits, waistcoats and ties and a handful of ladies in long dresses and hats, even in the field! - introduces a series of fascinating photographs and brief biographical notes on a couple of dozen famous geologists together with illustrations of the, often rather individual, styles of hammers they used. Quite apart from its rather niche interest as a celebration of the geological hammer, the book is worth acquiring for these personal insights. As well as familiar pictures of such pioneering 'giants' as Sedgwick, Lyell and Buckland, here we have informal shots of

famous, but seldom pictured, figures such as Gertrude Elles, Alfred Harker and Oliver Bulman. Indeed, perhaps these hint at the potential for a future book. Whereas as geologists we so commonly take the names and research achievements of so many of our predecessors almost for granted, for how many of them can we imagine a face or any biographical details. Somehow their names and work become more vivid by knowing how they looked, or perhaps what interests they pursued outside of geological science.

For the time being we may perhaps feel a rather closer affinity with some of those famous names illustrated in this book by knowing what they looked like and what they used to obtain and study the rocks, minerals and fossils for which we remember them. At £7.50 this attractive and unusual book is an inexpensive and worthwhile addition to any geologist's bookshelf.

Brian Young - January 2017

A PHOTOGRAPHIC GUIDE TO SHETLAND'S GEOLOGY

David Malcolm & Robina R. Barton

Published by The Shetland Times Ltd,
Lerwick, Shetland, 2015

ISBN 978-1-904746-97-3

Cover price £15.99

For anyone with a love of landscape at its wildest and most remote, the Shetland Isles are surely a 'must visit' destination. Here are unrivalled opportunities to explore a truly

remarkable variety of natural history against a backdrop of wild moorland, spectacularly dramatic coastlines and wide seascapes, best enjoyed in the '*simmerdim**' of mid-summer. In addition to its wildlife, this is one of Britain's most varied and complex pieces of geology and the enthusiastic promotion of Shetland's obvious pride at being part of the UNESCO Global Geopark network, an approach that could with advantage be emulated by other geoparks nearer to home, is obvious to all visitors from the moment of one's arrival either via the ferry or airport.

Following a very brief outline of the main features of the islands' geological history and diversity, in which they highlight the importance of geology in understanding other aspects of natural history and human activity, the authors embark upon their main objective: an introduction to Shetland's rocks and landscapes through a series of colour photographs in sections devoted to e.g. Extrusive igneous rocks, Intrusive igneous rocks, Sedimentary rocks, Landscape, Rocks, minerals and man, etc. Full or half page colour photographs, some with inset pictures attempting to depict key features in greater detail, are accompanied by brief explanatory texts. A very short Glossary of terms is provided and there are suggestions for further reading. As a general introduction to those who may not have any specialised knowledge or training in geology, and in line with the authors expressed view that geology is not the preserve of an academic few, but is something accessible to all, for an area as diverse and complex as Shetland this seems to be an ideal approach. It was therefore

with some eager anticipation that I looked forward to my reading of this book.

However, as I turned the pages these hopes were soon disappointed.

Whereas many of the photographs are of good quality, some are not, or at least do not reproduce well. Although some do illustrate the features described, too many others do not, and some illustrate features that hardly merit comment. Pictures of exposures of granite, monzonite, diorite, gabbro etc. could well be pictures of any pink or grey rock: they convey little or nothing to distinguish the rock types indicated. Especially disappointing are three out of focus and over-exposed pictures apparently of pegmatite specimens. Many of the insets show nothing more than the main picture. Although some pictures carry linear scales, most carry no scale whatsoever, rendering it difficult to appreciate the size of the features illustrated. The descriptions of some views ignore the most conspicuous features shown, e.g. the caption of a fine view of a rhyolite lava flow in a sea cliff makes no reference to the striking columnar jointing so conspicuously displayed.

Perhaps most disappointing and surprising for a book intended to whet the appetite for some of the remarkable rocks for which Shetland is famous, is what is missing. For example, why are such unique and spectacular rocks as the orbicular riebeckite felsites, much used by Neolithic Man for polished stone tool making and with magnificent examples held in Lerwick

Museum, completely overlooked. Similarly, mindful of Shetland's former importance as a commercial source of chromite, and in the light of the excellent on-site interpretation of this industry at Hagdale on Unst, why are we denied pictures of these striking chromite-rich rocks or of the quarries from which they were extracted. Instead the reader is offered a single over-exposed picture of what is said to be a weathered dunite in which a mere 6 scattered grains of chromite can be seen! Talc, or 'soapstone, working, including its working for cooking pots in the Neolithic period, another industry unique in Britain to Shetland, receives similarly meagre treatment. Instead of a convincing view of a quarry face in which partially carved Neolithic pots remain visible (there really are such sites), we are offered a view of a small waterfall adjacent to an otherwise meaningless exposure of 'soapstone'. Lerwick Museum features fine examples of Neolithic 'soapstone' artefacts one or two examples of which would have greatly enhanced the book's intended message.

One short photographic sections devoted to 'Hydrothermal Veins' offers a couple of views of much less than impressive quartz veins, but astonishingly makes neither reference to, nor illustrates, any of the remarkably conspicuous wide scapolite veins which are such an important and highly unusual feature of Mainland Shetland.

A curious section given over to 'Miscellaneous rocks' features a few entirely unremarkable lichen- and algae-coated boulders, though without any suggestion of

the identity of the lichen, algae or the rock: one admittedly colourful seaweed-coated cobble even makes it onto the front cover! Even more bizarre is the inclusion of 3 full pages illustrating nothing more than weak iron-staining on boulders of unidentified rock types with, even more inexplicably, one showing the results of cleaning.

The title of 'Rocks and minerals identification chart' for the book's final 9 pages is seriously misleading. Whereas one might reasonably expect these to assist with identification, they comprise nothing more than blank pages on which to record one's findings.

Although not a publication originating from the Shetland Geopark it is noted that a proportion of the royalties arising from the book's sale will be donated to the Geopark. Unfortunately, I do not consider that this book does justice to this otherwise enthusiastically and well-interpreted geopark and at a cover price of £15.99 I cannot regard it as value for money. However, do not let this discourage a visit to Shetland if you've not yet been there, just go with one or more of the references listed and enjoy the geopark interpretation displays literature during your visit.

**Simmerdim* : A Shetland term for the long twilight hours of the islands' near continuous daylight during midsummer – one of many of the delights of a visit to Shetland.

Brian Young - January 2017

Many thanks to Brian Young for the two book reviews.

Members are reminded that this is their Newsletter and input is always valued.

(Secretary NEGS)

ADMINISTRATION

A reminder that the AGM will be in March, and membership renewal!

Notice of the AGM will be requesting nominations for various Committee posts so do give consideration to this.