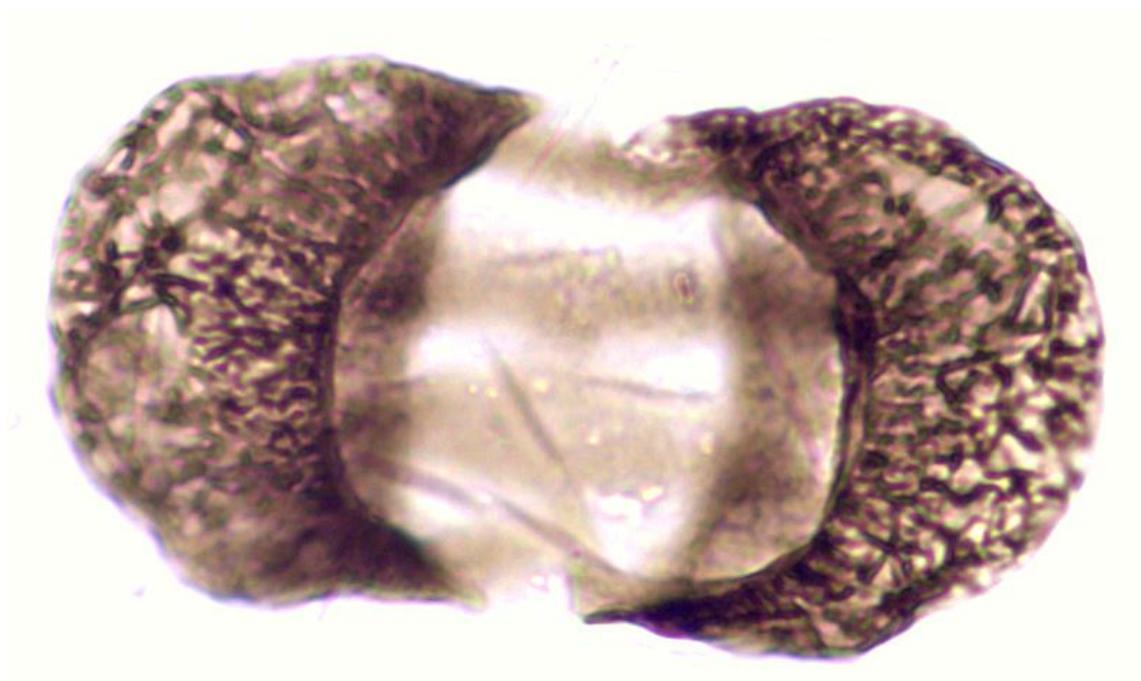


# Centre for Palynology Newsletter 7

December 2017

## Editorial

The seventh Centre for Palynology Newsletter celebrates another eventful year. We are particularly excited to introduce a new staff member (or rather return of an old staff member). Dave Bodman has joined us part-time (two days per week) to run the Palynology Laboratory. Not before time we have a lab manager and technician to ensure that the lab is all 'shipshape and Bristol fashion'. We hope that you enjoy the newsletter, and remember--if you are in town--on the last Thursday of the month you can usually find us in the Red Deer discussing all things palynological.



*Taeniaesporites sp. from the Zechstein of North Yorkshire*

## Graduating Ph.D. students

**David Carpenter** was awarded a Ph.D. following his viva voce exam in March. David's thesis is entitled "*Charcoal, forests and Earth's Palaeozoic geochemical oxygen-cycle*". It was a NERC funded project associated with a NERC Standard Grant and was supervised by John Marshall (University of Southampton) and Charles Wellman/David Beerling (University of Sheffield). Barry Lomax (University of Nottingham) was external examiner. Barry undertook his Ph.D. at the University of Sheffield, supervised by David Beerling, studying the KT-boundary. Subsequently he was also a post.doc. with Charles Wellman at Sheffield on a 3-year NERC grant studying spore-wall chemistry as a proxy for past UV-B levels.



*David Carpenter (left) and Steph Wood (right) at her Ph.D. graduation ceremony this Summer*

### **Current Ph.D. students**

**Alexander Askew** is in the fourth and final year of his Ph.D. research project studying the palynology of the Middle Devonian Huergas Formation (and coeval strata) from Asturias, the Cantabrian Mountains and Palencia in northern Spain. Alex has undertaken two field trips and the numerous samples he has collected yield incredibly diverse assemblages of well preserved palynomorphs representing a mix of marine and terrestrial forms. The project is a 4-year ACCE studentship funded by NERC and supervised by Charles Wellman.

**Martha Gibson** is in the second year of her Ph.D. research project studying the palynology of the Upper Permian Zechstein sequence of North Yorkshire. Martha's material is from over 16,000 m of borehole core drilled by Sirius Minerals in the developmental stages of what will be the World's largest polyhalite mine. The project is a 4-year ACCE studentship funded by NERC and supervised by Charles Wellman, Geoff Warrington (formerly BGS) and Tristan Pottas/Asher Haynes of Sirius Minerals. Martha has already recovered stunning palynomorph assemblages, including some from Zechstein cycles surprisingly high in the sequence.



*Alex and Martha beneath the gaze of Darwin and Wallace at this year's Linnean Society of London Palynology Specialist Group meeting*

## **A new Ph.D. opportunity**

We are advertising a new Ph.D. studentship to commence in September 2018. It is a NERC funded award that is a CASE studentship with the Natural History Museum, London. The project is entitled “*The late Silurian-Early Devonian adaptive radiation (‘explosion’) of vascular plants*” and it will be co-supervised by Charles Wellman (University of Sheffield) and Drs Paul Kenrick, Steve Stukins and John Richardson (the Natural History Museum, London). The project is based on palynological analysis of material collected over many years by John Richardson from the Welsh Borderlands. It covers the mysterious *Apiculiretusispora* sp. E spore biozone that lies between the TS and MN spore biozones and spans the critical Silurian-Devonian boundary. If you know of anybody that is interested further details and information on how to apply are available at:-

[<http://www.sheffield.ac.uk/aps/prospectivepg/graduate-opportunities/>].

## **Visiting Professor of Palynology Geoff Clayton**

Geoff has been a frequent visitor over the year acting as an ‘unofficial supervisor’, internal examiner and general sounding board regarding all things palynological. Geoff continues work preparing our ‘Palynology Impact Case Study’ for the next national research assessment of all UK university departments in 2021 [Research Excellence Framework (REF)]. In the previous 2014 REF departments were judged on research outputs (publications), research funding, esteem indicators and Impact Case Studies. The latter were new to the system. They consist of detailed reporting of how research within your department impacts industry and society. We have been asked by the university to prepare an Impact Case Study that highlights how our palynological research is used in the hydrocarbon exploration industry. No doubt we will be contacting some of you in the near future asking for letters of support and other supporting evidence!

## **Undergraduate teaching**

This year six undergraduate students selected palaeontology for their Level 3 project topic. They have been undertaking an analysis of dispersed spore/pollen assemblages from Permian Zechstein deposits from the Kimberley railway cutting in Nottinghamshire. As well as studying the dispersed spores/pollen in order to conduct a palaeoecological analysis, the students have been sectioning some of the more mysterious pollen grains for TEM analysis in an attempt to shed light on their botanical affinities.



*The undergraduate Level 3 project students studying Permian spores/pollen from Nottingham*

We have one Level 4 M.Biol.Sci. masters student studying palaeontology this year (Sam Peters). Sam is taking on some Neoproterozoic Torridonian material (based on material originally worked on by Charles Downie in the 1970s). Sam is particularly interested in some peculiar multicellular embryo-like structures.



*Sam with a Torridonian block of lake sediments with ripples overlain by classic 'elephant skin' MISS (Microbially Induced Sedimentary Structures)*

## **Congratulations to...**

**Alexander Askew & Martha Gibson** who were awarded travel grants from CIMP and the Palaeontological Association to attend various conferences.

**Matthew Jones** who was awarded the 2017 Palaeontological Association Undergraduate Prize for his final year Level 4 project work on the palynology of Lower Devonian marine sediments from New Brunswick, eastern Canada.

**Charles Wellman** who was awarded two grants this year. A NERC Standard Grant (“Excavating the roots of the tree of life: revealing a billion year fossil record for the euglenids”) is for three years and involves a study of the deep fossil record of euglenids in the palynological record. The grant has allowed us to employ Dave Bodman as a part-time laboratory manager and a full time postdoc for a year in 2019-2020. A National Geographic grant has been awarded to fund an expedition to study the Devonian of Spitsbergen during Summer 2018.

## **Outreach**

Unfortunately due to everybody being away we were again unable to attend the Yorkshire Fossil Festival that this year was held in Scarborough. Hopefully next year!

## **Laboratory, Library and Collections News**

After a year-or-so of relative neglect the paly lab is undergoing a much needed overhaul as Dave Bodman returns and begins to knock it back into shape. The only structural change to report is the installation of two large metal cages in the Dainton Building basement used to store (an awful lot) of old industrial samples. Previously these had been rather randomly piled up in the back corridor of Dainton Building. This area has recently been renovated and the samples needed to be moved so estates provided us with a much safer and more convenient storage space.

We continue to attract student volunteers to help curate the old geology collections and the palynology collections. Chloe Walker-Trivett (former Level 4 student) continued work on curating the extensive Coal Measures plants collection. This includes some wonderful specimens acquired by Leslie Moore and Bob Wagner over the years. Shaun Goodchild (current Level 3 project student) is also helping out with this task.



*Bodders is back!*

Our library resource was boosted this year by a number of kind donations. We received several boxes of books from the late Bill Braham's library (see obituary in AASP-TPS Newsletter 49:4). Geoff Clayton also donated copies of the palynology theses he supervised whilst at Trinity College, Dublin along with a number of classic palynological monographs and books that are becoming increasingly difficult to obtain and are extremely useful.

Regarding the palynology collections, we have attempted to help out with a number of queries this year, including a search for specimens for Stan Duxbury.

## **Publications 2017**

This year saw the publication of the fifth collection of papers emanating from the joint CIMP/Saudi Aramco project: 'Palaeozoic palynology of the Arabian Plate'. These were published as a special issue (Volume 60, Issue 3) of the journal *Revue de Micropaleontologie* [New palynological investigations in the Paleozoic of Saudi Arabia and adjoining area (Saudi Aramco-CIMP Joint Project)] edited by Marco Vecoli, Charles Wellman & Sa'id Al-Hajri.



Other publications are:-

**Boyd, J. L., Riding, J. B., Pound, M. J., De Schepper, S., Ivanovic, R. F., Haywood, A. M. & Wood, S. E. L. 2017.** The relationship between Neogene dinoflagellate cysts and global climate dynamics. *Earth-Science Reviews*

**Breuer, P., Al-Hajri, S., Le Herisse, A., Paris, F., Steemans, P., Verniers, J., & Wellman, C. H. 2017.** A distinctive marginal marine palynological assemblage from the Pridoli of northwestern Saudi Arabia. *Revue de Micropaleontologie* 60, 371-402.

**Clayton, G., Goodhue, R., Abdelbagi, S. T., & Vecoli, M. 2017.** Correlation of Palynomorph Darkness Index and vitrinite reflectance in a submature Carboniferous well section in northern Saudi Arabia. *Revue de Micropaleontologie* 60, 411-416.

**Davies, N. S., Gibling, M. R., McMahon, W. J., Slater, B. J., Long, D. G. F., Bashforth, A. R., Berry, C. M., Falcon-Lang, H. J., Gupta, S., Rygel, M. C. & Wellman, C. H. 2017.** Discussion on 'Tectonic and environmental controls on Palaeozoic fluvial environments: reassessing the impacts of early land plants on sedimentation'. *Journal of the Geological Society* 174, 947.

**Le Herisse, A., Guidat, C., Not, F., Vecoli, M., Breuer, P., Wellman, C. H., & Steemans, P. 2017.** Middle Ordovician acritarchs and problematic organic-walled microfossils from the Saq-Hanadir transitional beds in the QSIM-801 well, Saudi Arabia. *Revue de Micropaleontologie* 60, 289-318.

**Marshall, J. E. A., Huacheng Zhu, Wellman, C. H., Berry, C. M., Yi Wang, Hongue Xu & Breuer, P. 2017.** Endemic Devonian spores from South China, Saudi Arabia and Australia. *Revue de Micropaleontologie* 60, 403-409.

**Slater, S. M., McKie, T., Viera, M., Wellman, C. H. & Vajda, V. 2017.** Episodic river flooding events revealed by palynological assemblages in Jurassic deposits of the Brent Group, North Sea. *Palaeogeography, Palaeoecology, Palaeoclimatology* 485, 389-400.

**Vecoli, M., Wellman, C. H., Gerrienne, P., Le Herisse, A., & Steemans P. 2017.** Middle Ordovician cryptospores from the Saq-Hanadir transitional beds in the QSIM-801 well, Saudi Arabia. *Revue de Micropaleontologie* 60, 319-331.

**Wellman, C. H. 2017.** Palaeoecology and palaeophytogeography of the Rhynie chert plants: further evidence from integrated analysis of in situ and dispersed spores. *Philosophical Transactions of the Royal Society B* 373: 20160491.

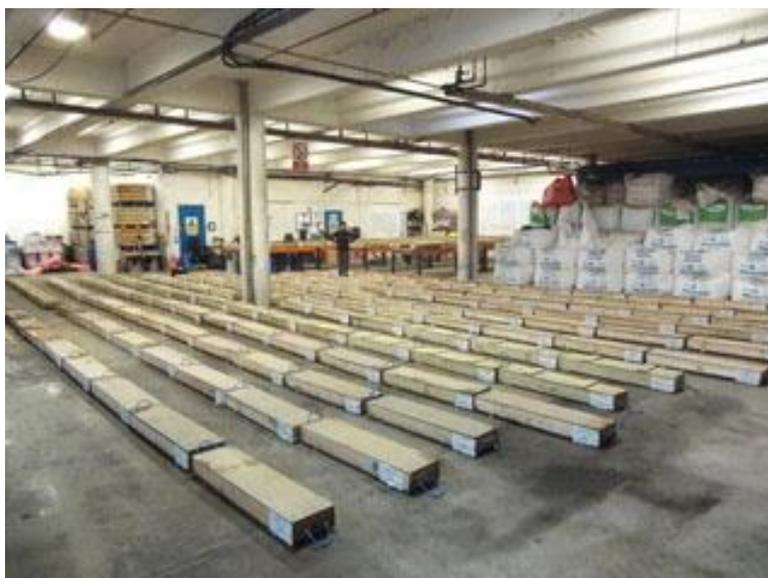
## Meetings 2017

Members of the Centre for Palynology have attended a number of meetings this year and presented a variety of talks and posters (many of you will have witnessed these). These are listed below:-

- 25<sup>th</sup> Meeting of the Brazilian Palaeontological Association, Ribeirao Preto, Brazil [Wellman]
- TMS Palynology Group Meeting at Liverpool University [Askew, Gibson]
- Progressive Palaeontology at Leicester University [Askew, Gibson]
- Royal Society Discussion Meeting (The Rhynie chert: our earliest terrestrial ecosystem), London [Wellman]
- The Golden Anniversary Meeting of AASP-The Palynological Society, BGS, Nottingham [Askew, Clayton, Gibson, Wellman]
- Linnean Society Palaeobotany Specialist Group, London [Askew, Gibson, Wellman]
- Linnean Society Palynology Specialist Group, London [Askew, Gibson, Wellman]
- Palaeontological Association Annual Meeting at Imperial College, London [Askew, Gibson, Wellman]

## Fieldwork 2017

During 2017 Martha Gibson collected from numerous exposures along the outcrop of the Zechstein of northeast England. Charles Wellman undertook fieldwork collecting Lower Devonian 'Lower Old Red Sandstone' deposits in the Midland Valley of Scotland and Lower Devonian deposits from the Cantabrian Mountains of northern Spain (the La Vid Group).



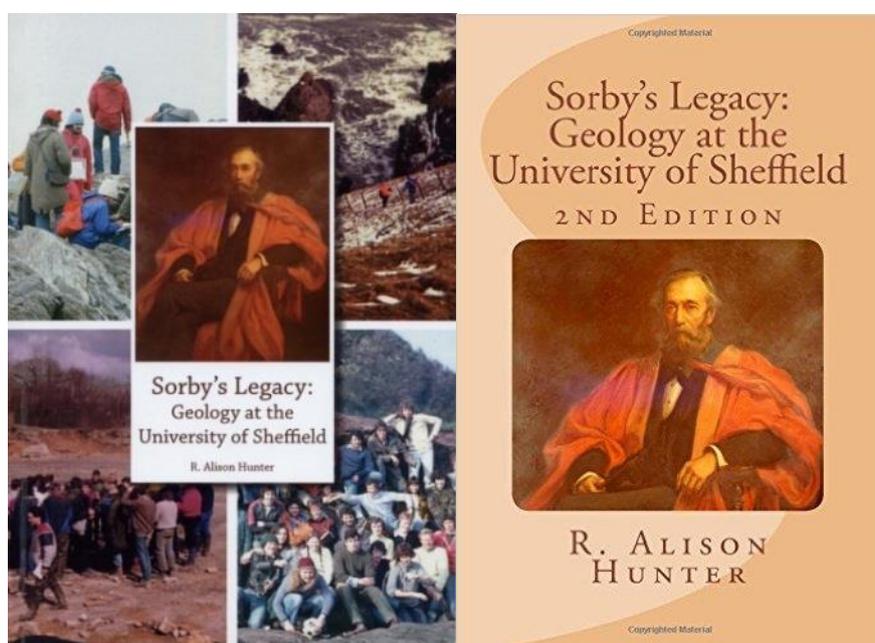
*Martha lost among the cores at the Sirius Minerals core store*

## Visitors

As usual we welcomed a number of visitors to the Centre for Palynology this year. These included Awad Ibrahim (Sudan) and Jenny Morris (Bristol and Cardiff).

## Second edition of 'Sorby's legacy: Geology at the University of Sheffield'

Details on how to purchase the second edition of Alison Hunter's book 'Sorby's legacy: geology at the University of Sheffield' are available on the website [<http://www.geologyatsheffield.co.uk>]. We are extremely grateful to Alison who continues to donate all profits from the sales of her book to the alumni fund for the Centre for Palynology. This fund is used to finance student fieldwork and conference attendance and to purchase materials we would otherwise be unable to obtain. For example, this year we have used it to purchase Florentin Paris' chitinozoan database along with the supporting computer software. We thoroughly recommend you browse Alison's website, which is updated at regular intervals, and is crammed full of information including wonderful old photographs and other historical archives. You may also want to send Alison information or photographs to be included.



*"Sorby's Legacy: Geology at the University of Sheffield" by R. Alison Hunter (1<sup>st</sup> and 2<sup>nd</sup> editions)*

## News from former students of the Centre for Palynology

Please keep in touch (e-mail [c.wellman@sheffield.ac.uk](mailto:c.wellman@sheffield.ac.uk)) and keep us updated with respect to your contact details. And most importantly--please send in your alumni news for the next newsletter.

## Christmas Dinner

The 2017 Christmas Dinner was held on Thursday 7<sup>th</sup> December at the Red Deer as is traditional. Along with the current Centre for Palynology and MB Stratigraphy palynologists various other alumni attended including Paul Dodsworth, Rex Harland, Barry Lomax, Brian Pedder, Janine Pendleton and Steph Wood. Many thanks to Martha Gibson for organising this highly enjoyable event.



*The Christmas Dinner 2017 upstairs at the Red Deer*