Dear Colleague,

It is my pleasure to welcome to the May Micromorphology Newsletter. It contains quite a lot of information, mainly forthcoming meetings and short research notes, which show the good health of micromorphology.

I encourage you to send any new information to the vice-chair, Martine Gerard, or to me.

I am looking forward to meeting you during the next IWMSM in Lleida,

Best greetings,

Rosa M Poch
Chair, IUSS-Commission 1.1.
IN MEMORIAM PROF. ULRICH BABEL

On September 19th, 2011, one of the pioneers of soil micromorphology, Ulrich Babel, passed away in Heilbronn at the age of 79.

Ulrich Babel was born on November 4th, 1931, in Bonn (Germany). After finishing his secondary school in Heilbronn in 1951, he enrolled at the Faculty of Agricultural Sciences at the University of Giessen where he obtained a PhD degree in 1958. Thereafter he was involved in several research projects of the German Research Foundation (DFG), before becoming Research Assistant at the Botanical Institute of the Agricultural University of Hohenheim (1965 -1966) and the Soil Science Institute of the University of Göttingen (1966-1969). With the support of a grant of the DFG he continued his research and was awarded the “habilitation” degree (highest academic degree in Germany and several neighbouring countries) in 1971 in Hohenheim, where he thereafter became professor from 1974 on till his retirement in 1995 (data extracted from Fellmeth & Winkel, 2008).

His main research interests were humus formation, the influence of roots, pedobiology and the relation between vegetation, management and soil, and especially their micromorphological aspects. His contributions to the latter discipline, especially in the field of organic matter and humus forms, are insufficiently appreciated. At a moment that micropedological research was still dominated by the morphogenetic approach of Kubiëna, Ulrich Babel started to look at organic soil constituents in a modern, morphoanalytical way. Therefore he introduced specific methods, such as the use of chemical tests on thin sections (Babel, 1964) and the application of fluorescence microscopy (Babel, 1972). As a trained botanist his approach to organic matter in soils was different, and much more detailed and original, than that of most other soil scientists. As a real scientist, accepting compromises in science was not Babel’s style,. Therefore he also tried to avoid pragmatic solutions whenever possible. Last decennia his got also involved in micromorphometry. Also here he included, with his students, studies on the more theoretical and mathematical aspects, rather than looking for quick superficial results.

In the period 1972-1993, Ulrich Babel supervised 17 “Diplomarbeiten” (MSc thesis) and between 1983 and 1996 eight PhD dissertations. From 1958 till 1997 he published 80 scientific papers, many on micromorphology, in national and international journals and proceedings (for more details see Stahr, 1997, p. 217-223). His most widely known publications in micromorphology are without doubt his contribution in the standard work of Gieseking (Babel 1975) and his chapter on organic matter in Bullock et al. (1985).

There is no doubt that our scientific community lost with Ulrich Babel an exceptional researcher that made several fundamental contributions to soil micromorphology.

References


G. Stoops
FORTHCOMING CONFERENCES AND MEETINGS

Goldschmidt 2012 (JUNE 24-29, 2012) • MONTRÉAL, CANADA
http://www.goldschmidt2012.org/

Session: 7d. Records of climate change from terrestrial archives: palaeosols and loess
Co-convenors: Mohammed Rafi G. Sayyed (Poona College, Pune, India), Martine Gerard (IMPMC, Paris)

The driving forces of evolution of Earth’s climate, from cold snowball Earth to warm greenhouse state, can be revealed and quantified by palaeoclimate studies. Nowadays fragile global environmental conditions demand urgent improving of the understanding of paleoclimates to better predict climate change. The physical, chemical and biological composition of ancient soils or more polygenetic buried soils hold great potential as proxies for regional palaeoclimate and palaeoatmospheric circulation patterns as well as palaeoatmospheric pCO2 variations for intervals of Earth’s history characterized by extreme and abrupt environmental perturbations. More understanding of the mechanisms that influence biogeochemical data preservation in the proxies is needed to avoid biases of interpretation. Once these issues are addressed, the geochemistry of palaeosols can provide both qualitative and semi-quantitative information about the changing redox state of the atmosphere since the Precambrian times. Palaeosol-loess sequences also have a great potential for the evolution of climate throughout Earth’s history as they have preserved detailed climatic records of stepwise terrestrial climate change. We invite contributions that investigate various biogeochemical proxies of the evolution of the climate system from Precambrian to Holocene as well as on extreme events (e.g. LIPs related to catastrophic global climate impacts and mass extinctions events).

Session: 14b. Reciprocal interactions between archaeology and archaeometry focusing on the characterization of ancient human settlements and their environmental impacts
Co-convenors: Alain Veron (CEREGE-Aix en Provence), Adrian L. Burke (Université de Montréal), Jean-Philippe Goiran (Université de Lyon), Frédéric Trément (Université Blaise Pascal, Clermont-Ferrand)

This session aims to promote interactions between archaeology and archaeometry to resolve questions related to the development of ancient human activities. Paleo-ecological, geochemical and sedimentological data (pollen, biocénosis, stable and radiogenic isotopes, geomorphology and stratigraphy) will be presented within well-defined archaeological or geographic research questions that substantiate the need and usefulness of archaeometry. We place an emphasis on interdisciplinary research related but not limited to the characterization and growth of i) Neolithic and Early Bronze age settlements in the Mediterranean basin and late prehistoric settlements (Woodland, Mississippian, Post-Archaic) in the Americas, ii) prehistoric mining activities and their environmental impacts and iii) possible connections between socio-cultural theories and science-based archaeology within the context of mining activities. We also wish to draw special attention to investigations related to i) Native/Aboriginal settlements and associated industrial remains of organized craft production and metallurgy in the Americas, ii) the founding of ancient Mediterranean harbors, and iii) Western European mining activities during the Late Bronze and Iron Ages.
Eurosoil 2012 has 2 sessions dealing with micromorphology, scheduled for Thursday the 9th July:

**S9.1.**
Title: Soil micromorphology: a journey from soil genesis to new interdisciplinary advancements  
Conveners: Stahr Karl - Hohenheim University - Germany  
Terrible Fabio - University of Napoli Federico II - Italy  
Co-Conveners: Kapur Selim - University of Cukurova - Turkey  
Poch Rosa M - University of Lleida – Spain

**S9.2.**
Title: Biogeochemical interfaces in soil: architecture, properties and functions  
Convener: Totsche Kai Uwe - Friedrich-Schiller-Universität Jena - Germany  
Co-Conveners: Rennert Thilo - Friedrich-Schiller-Universität Jena - Germany  
Vogel Hans-Jörg - Helmholtzzentrum für Umweltforschung - Germany  
Gerzabek Martin - University of Natural Resources and Life Science - Austria  
Kögel-Knabner Ingrid - Technische Universität München - Germany

Registrations are still possible through www.lleida2012.udl.cat. The preparations for the July meeting are advancing according to what was planned. At present there are more than 80 abstracts that are being reviewed and we expect to reach 100 participants. The registered participants are receiving practical informations and the organization (Fundació 700 aniversari, fundacio@700.udl.cat) will be grateful to have feedback regarding some practical aspects.

The two practical workshops will be held in Barcelona, in parallel with the two first days of scientific sessions in Lleida.

Frame programme:

Sunday 8th July
Optional touristic tour by bus in the morning in Barcelona
17:30 Registration of participants at Institut d’Estudis Catalans (http://www.iec.cat) c/ Carme 47, Barcelona.
18:15-19:00 Opening session
19:00-20:00 Reception
20:00 Bus to Lleida (for those who attend the scientific sessions Monday and Tuesday). Arrival in Lleida at 22:00 (approx.). The bus will drop the participants at their hotels.

Monday 9th and Tuesday 10th
9:00 to 18:00 (lunch break 13:30-15:00)
- Scientific sessions in Lleida (Centre de Cultura Transfronterera, Lleida). http://www.udl.cat/localitzacio/cappont.html (red building)
- Parallel microscope workshops in Barcelona (Faculty of Geology): http://www.ub.edu/geologia/queoferim/en/index/arribar.htm
  - Archaeological Soil Micromorphology – Richard MacPhail
  - Glacial sedimentology – Jaap Van der Meer
18:30 Bus to Lleida on Tuesday 10th evening (18:30)
Wednesday 11th
8:30 to 18:30 (approx.) Mid-Meeting Excursion: Iberian Fortress of Els Vilars / Soils on Stone-Bench Terraces. Les Garrigues.

Thursday 12th
9:00 to 18:00 (lunch break 13:30-15:00) Scientific Sessions in Lleida
18:30 Depart from the conference building to the Seu Vella
19:00 to 20:15 Guided visit
20:30 to 21:30 Meeting dinner
21:30 Concert

Friday 13th
9:00-13:00 Scientific Sessions
15:00 – 16.00 Closing session and farewell

The Proceedings of the 14th IWMSM will contain the abstracts of the presentations and will be distributed among the participants in a USB pen drive.

It will be possible to publish the complete papers in a special issue of the Spanish Journal of Soil Science (open-access, e-journal, free-of-charge, http://sjss.universia.net/), and also in an archaeology-oriented journal, still to be determined. More details will be given during the business meeting.
The conference is intended as a forum linking together a wide range of specialists in Earth sciences taking part in interdisciplinary studies of archaeological sites. Palaeoenvironment of the sites, their natural resources, palaeo-land-use patterns; risk assessment and protection against environmental damaging processes of different nature (geomorphological, hydrological, pedological) are on the agenda. Pedologists, paleopedologists, soil micromorphologists dealing with geoarchaeological studies are welcome to participate.

More information: Dr. Maria Bronnikova mbmsh@mail.ru

http://geoarch2012.narod2.ru/
The **IUSS Global Soil Carbon Conference** is the first IUSS interdivisional and intercommissional conference that focuses on soil C in space and time, soil C properties and processes, soil C in relation to soil use and management, and the role of soil C in sustaining society and the environment. The global conference will be held at University of Wisconsin-Madison, USA.

**Costs**

US$300 (estimate) including coffees and lunches and fieldtrip. Fieldtrip and conference dinner separate.

**Global Scientific committee**

Jae Yang (Korea); John Kim (Korea); Alfred Hartemink (USA); Alex McBratney (Australia); Jim Gauld (UK); Karl Stahr (Germany); Martin Gerzabek (Austria); Rainer Horn (Germany); Chuck Rice (USA); Mary Beth Kirkham (USA); Stephen Nortcliff (UK); Don Sparks (USA); Roger Swift (Australia)

**Local organizing committee**

Bill Bland (Chair), Birl Lowery, Kevin McSweeney, Pat Leavenworth, Carl Wacker, Erika Marina-Spiotta, Leah Leighty, Alfred Hartemink
Under the name of the Division we will have a first divisional conference of Division I including Soil Mineralogy, Com. 2.4. It is planned that all commissions Soil Morphology including Micro Morphology, Soil Genesis, Soil Cartography, Soil Classification, Pedometrics and Paleopedology will take part with Symposia and Cross Commission Symposia. There will be also Working Groups, especially Working Groups on WRB and Universal Soil Classification to take part in this event. There will be for days of lecturing and on the 3rd October there will be a special event downtown Ulm because of the German National Holiday. Small excursions on carbon sequestration to the Danube Fens and Paleopedological Excursion are planned before and after the conference.

Commission 1.1. will organize 2 symposia, with the provisional themes:

- Soil morphological indicators of past environments
- Soil structure and OM sequestration: what can micromorphology can tell us?

More information: Karl.Stahr@uni-hohenheim.de

https://iuss-division1.uni-hohenheim.de/
II Latin-American Course of Soil Micromorphology and Complementary techniques

The first edition of this took place in Medellín, from 8th to 19th August 2011, with the objective to extend Soil Micromorphology knowledge to Spanish-speaking scientists in Latin America. The second edition of this course will focus on the study of the effects of climate change and land uses on soils, with a micromorphology approach. The course will be oriented to agronomists, geographers, geologists, archaeologists, biologists and environmental scientists interested on this discipline in a tropical context, and on its applications.

The course will be held in Bogotá (Colombia) in July 2014. It is supported by the Geography Department of the Universidad Nacional de Colombia, the Sociedad Colombiana de Ciencias del Suelo, the Department of Environment and Soil Sciences of the Universitat de Lleida (Spain) and the Commission 1.1 Soil Morphology and Micromorphology of the IUSS.

Site: Departamento de Geografía, Universidad Nacional de Colombia. Carrera 30 N°45-03, Bogotá D.C. Telephone: (57) – (1) 3 16 50 25

Organizing entities: Grupo de Investigación Tiempo, Clima y Sociedad, Departamento de Geografía Universidad Nacional de Colombia, Escuela de Biotecnología - Universidad Nacional de Colombia – Sede Medellín.

Duration: 6 credits (60 hours of lectures and practical exercises)

Language: Spanish

Lecturers:
Juan Carlos Loaiza (Universidad Nacional de Colombia – Sede Medellín)
Rosa Poch i Claret (Universitat de Lleida – Spain)
Kim Robertson (Universidad Nacional de Colombia)
(Other lecturers to be determined)

Main subjects
- Soil formation under tropical conditions.
- Sampling techniques and thin section preparation methodologies.
- Mineralogy and petrography principles.
- Thin section and regolith description
- Micromorphology and pedogenesis, application to paleoclimatic reconstruction
- Micromorphology, soil survey and soil spatial variability
- Agronomical applications and soil management.
- Micromorphometry and digital images processing.
- Geoarchaeology applications and paleoenvironmental dating.

More detailed information will be provided in future announcements. Contact information: waposadare@unal.edu.co
Water infiltration is a crucial process for functioning of vegetated buffer zones (BZ). Structure of a clayey surface soil of three differently managed BZs, i.e., 1) natural with no treatment, 2) harvested once a year and 3) grazed by cattle was investigated in this study. Soil macro pores (>50 μm) were characterized by qualitative description and quantitative image analysis of soil thin sections in order to assess their capability to water infiltration. Less than 10% of the macro pores consisted of rounded and irregular pores smaller than 300 μm indicating root activity. Instead, macro porosity was clearly dominated by elongated pores characterized by irregularity, expressing the complexity of the pore system. This pore pattern appeared in thin sections as weak or moderate ped separation suggesting good water infiltration when initially dry. Partial accommodation of pores may result in decrease of hydraulic conductivity, as these pores tend to close upon wetting and swelling. In the grazed site a platy structure was observed due to hoof pressure, which may further impair the hydraulic properties of soil. Moisture and temperature related processes (shrink–swell, freeze–thaw, and water saturation) are thought to be conducive to the aggregation and rearrangement of soil structure around the year, resulting in a complex pore system with low intra-aggregate porosity. In addition, wet periods typical of boreal soils result in clay dispersion and formation of aggregate-related pedofeatures of dense infillings, described as fine clay intrusions.

Selected micrographs of vertical thin sections of the investigated treatments. Each micrograph was taken with bright-field illumination and cross polarized light illumination. ci: clay intrusion with low intra-aggregate porosity; ci+: clay intrusion with relatively sharp angled edges; rc: root channel.
I am in the process of writing two grants to investigate unconsolidated reservoirs, more specifically oil sands. The First Grant if awarded will allow for investigation of reservoir conditions as testing will be on core from the Estuarine Depositional Environment. The study will be carried out with full support of SkyScan and include Mico CT scanning and micromorphology. The end result is an expected 3D model which would be furthered to analyse potential fluid flow paths of heavy oil through the reservoir. The second grant that is being written will join industry and academia to explore the behaviour of the micro CT scanning equipment working with oil sand material and will be carried out with SkyScan.

The Influence of Fabric Arrangement on Oil Sand Samples from the Estuarine Depositional Environment of the Upper McMurray Formation

J. Bell (1), A. Boateng (1), O. Olawale (1), D. Roberts (1)
1. Petroleum Engineering, London South Bank University, London, United Kingdom

MODIFIED ABSTRACT
The Upper McMurray formation of Canada, more specifically, samples from the estuarine depositional settings taken in Athabasca displayed high porosity based on an initial study. The analysis of the spatial arrangement and distribution of the oil sand constituents showed that bitumen was distributed within the quartz grains and also between the quartz grains. Another distinctive feature was the distribution of bitumen in the non-connecting large pores (vughs). The micromass was observed as forming bridges between the quartz grains and may be associated to larger clay bands. Importantly, soil structure was observed in thin section to be associated with Spodic horizons and the fabric of the grains ranged from Enaulic to Gefuric c/f related distribution patterns. This indicates that the oil and meteoric water migrated into a sandy material with inherited soil structure. An analysis of this type has the potential to differentiate between parts of the formation where connectivity will have a bearing on the relative ease and cost of production of steam-assisted gravity drainage (SAGD) projects.

Application of Petrographic Image Analysis and Multivariate Statistical Techniques for Textural Studies of Oil Sand Samples

Julie Dee Bell1, Ovie Eruteya1, Oko Oono1
1. Petroleum Engineering, London South Bank University, London, United Kingdom
Key Words – Athabasca oil sands, fabrics, PIA, multivariate statistics

MODIFIED ABSTRACT
The thin sections were examined for a fabric analysis including composition and vectorial analysis using an integrated petrographic image analysis (PIA) system consisting of a high resolution petrographic microscope adapted with a digital camera for image acquisition and a commercial image analysis software package for image processing. The image analysis software was used to measure fundamental textural properties observed in thin section using the modified Griffiths properties measurement rule P=
From the PCA, the variable that contributed significantly to the textural fabric was the quartz content. The HCA showed that multi-groups existed based on variations in textural properties. Quartz grains were arranged in a matrix of micromass with vughs and varying amounts of bitumen throughout. The micromass consisted of both silt and clay sized material and ranged from dark to light brown with some mixture of bitumen which was mostly very dark brown. Multivariate statistical techniques provide an important tool for grain morphology studies of oil sands material and delineating relationships of textural features. Integrated studies of this type could aid in locating sweet spots along production wells for enhanced heavy oil recovery processes.

Coarse components were mostly quartz grains (Q) which was embedded in a micromass (M), although in some cases the micromass acted as a bridge between grains. Voids (V) were mostly vughs. Bitumen (B) was observed as coarse components and within the micromass.
Using thin section autoradiography to detect the Uranium content of Fe/Mn soil nodules
Donatello Magaldi\textsuperscript{1*}, Danilo Ranalli\textsuperscript{2}
\textsuperscript{1} DIPSA, University of Firenze, Italy, \textsuperscript{2} DISAT, University of L’Aquila, Italy
* Corresponding author; donatello.magaldi@unifi.it

The natural radioactivity of some paleosols from carbonate and siliciclastic rocks was studied using synthetic polycarbonate plates (CR39) in some Central and Southern Italian regions. The results demonstrate that Fe/Mn nodules, which are likely to form commonly in hydromorphic soils, are capturing Uranium together with rare metallic elements which have similar ionic potential.

Petroduric and ‘petrosepiolitic’ horizons in soils of Namaqualand, South Africa
Spanish Journal of Soil Science 2 (1), (March 2012), 8-25 (http://sjss.universia.net)
Francis, M., Fey, M.V., Ellis, F. & Poch, R.M.

Indurated, light-coloured ‘sepiocrete’ horizons have been found in Namaqualand Calcisols and Durisols. These horizons resembled calcrete but were non- to only mildly calcareous, resisted slaking in acid and alkali, and often broke with a conchoidal fracture. The presence of elevated quantities of sepiolite in the bulk-soil was confirmed by XRD analysis. The degree of induration in some these horizons suggested cementation by silica, and so in this paper the slaking properties, bulk chemistry, mineralogy and micromorphology of these horizons are compared with the typical silica-cemented, reddish-brown petroduric/duripan (dorbank) encountered in the region. ‘Sepiocrete’ horizons are chemically, mineralogically and morphologically distinct from the petrocalsic and petroduric horizons with which they are commonly associated. Micromorphology of the petroduric horizons revealed prominent illuviation in the form of oriented clay parallel to grains and crescent coatings on voids, a red matrix due to iron oxides, and translucent, isotropic amorphous silica coatings on grains and voids. In the ‘sepiocrete’ horizons, sepiolite appeared as a matrix of interlocking, sub-parallel fibres while the amorphous material was
localised. The amorphous material was silica-rich with prominent aluminium and lesser magnesium; light brown under plane polarised light; not completely isotropic and had a lower birefringence than the sepiolite. The calcite was usually micritic, but also appeared as loose granules and as elongate crystals in a sepiolite matrix. The presence of the laminar Si-Al-rich areas on the sections suggested at the least localised duric properties and so mutual reinforcement of sepiolite and silica is possible. However, the ‘sepiocrete’ horizons did not meet the slaking requirements of the petroduric (dorbank) horizons and are distinct in appearance to the typical petroduric horizons in the region. They contained more MgO than the region’s typical petroduric, and too little SiO2 to be silcrete. While the ‘-crete’ terminology provides a useful expression of the cemented nature of the horizon, in order to fit existing soil classification and description schemes the terms ‘sepiolitic’ and ‘petrosepiolitic’ (in the same sense as ‘calcic’ and ‘petrocalcic’) are proposed and defined. The term ‘sepiolitic’ would be useful in the adjectival form in petrocalcic or petroduric horizons where sepiolite is significant but not the primary cement. The genesis of the ‘petrosepiolitic’ horizons is likely to be essentially similar to that of petrocalcic and petroduric horizons, except for chemical differences in the matrix solutions from which secondary minerals were precipitated, dictated by the pH and evaporative evolution of the soil solution.

Images of ‘petrosepiolitic’ thin sections. Way-up is top of page. (a) KNERS/4, PPL. Granular microstructure; hematite (H)-micrite (M) compound coating on detrital grain and limpid sepiolite nodules (Mees 2010), black arrows. Scale 0.2 mm; (b) Same view as (a), XPL. Prolate calcite crystals project into voids; (c) SEM: calcium-rich granules (white) in fibrous sepiolite matrix (grey). Scale 100 μm, KNERS/2; (d) Magnification of (c). Scale 10 μm; (e) Sample KNERS/2. SEM-EDAX image showing calcium distribution, scale 200 μm; (f) Sample KNERS/2. SEM-EDAX image showing magnesium distribution, scale 200 μm; (g) Sample KNERS/2. SEM-EDAX image showing silica distribution, scale 200 μm.
Crop residue mulching combined with zero tillage and crop rotation, known as conservation agriculture (CA), is being promoted as an alternative system to revert soil degradation in maize-based farming in the central highlands of Mexico. The goal of this paper was to determine the effects of CA vs. conventional tillage systems on soil quality, with a special focus on the role of earthworms in affecting the soil structure morphology, and on crop yield. For the conventional tillage system, the effect of crop residue retention (CONV+RES) was also compared to the conventional farmers’ practice (residues removed; CONV). CA resulted in almost four times higher earthworm abundance when compared to CONV. Residue retention per se (CONV+RES) did not favor earthworm abundance. In all cases the earthworm community was dominated by exotic species. CA increased total N and soil organic C concentrations relative to CONV, but only at 0-5 cm soil depth. Nevertheless, the more pronounced vertical stratification of soil organic carbon content under CA favored soil surface aggregation and aggregate stability as expressed by the aggregate mean weight diameter after dry sieving (MWDDs = 2.6 for CA and 1.6 mm for CONV) and wet sieving (MWDws= 0.9 mm and 0.6 mm, respectively). Also, CA improved topsoil water stable macroaggregation (WSA= 415 mg g-1) when compared to CONV (251 mg g-1). Residue retention within conventional tillage (CONV+RES) led to small increases in topsoil aggregate stability (i.e. MWDDs and WSA). Soil structural improvements were accompanied by a higher direct surface water infiltration. Micromorphological analysis of thin sections indicated a loose and highly biogenic soil microstructure in CA, whereas CONV was characterized by a physiogenic microstructure, despite similar soil bulk densities (SBD). SBD is thus a poor indicator of soil physical quality when comparing different tillage systems. Redundancy analysis illustrated that CA resulted in improvement in most parameters related to soil quality, especially at the soil surface, but significant yield increases were recorded only in 2004. CONV+RES lead to marginal improvements in soil quality with no yield increases.
Soil structure morphology (0-30 cm depth) for conventional tillage (CONV), conventional tillage with residue incorporation (CONV+RES) and conservation agriculture (CA). Images are scans of the thin sections without optical multiplication. Arrows indicate: (a): soil crust; (b) compaction; (c) reworked slaked material; (d) physiogenic groundmass; (e) earthworm burrow; (f) bow-like infillings indicating earthworm-worked groundmass.
The ability to control fire was a crucial turning point in human evolution, but the question when hominins first developed this ability still remains. Here we show that micromorphological and Fourier transform infrared microspectroscopy (mFTIR) analyses of intact sediments at the site of Wonderwerk Cave, Northern Cape province, South Africa, provide unambiguous evidence—in the form of burned bone and ashed plant remains—that burning took place in the cave during the early Acheulean occupation, approximately 1.0 Ma. To the best of our knowledge, this is the earliest secure evidence for burning in an archaeological context.
aggregates in microfacies 2 and organometallic area (degraded charred material?) and bone fragments resting on the surface of microfacies 1. (Scale bar: 1 mm.) (j) Micrograph of bone fragment. (Scale bar: 100 μm.)

Recent publications by Paul Goldberg and/or Richard MacPhail


NEW BOOKS

Atlas of Non-Silicate Minerals in Thin Section
By Joan Carles MELGAREJO, Robert F. MARTIN
The Canadian Mineralogist, Special Publication Volume 7, 2011

The Atlas of Non-Silicate Minerals in Thin Section, Special Publication 7 of The Canadian Mineralogist, presents an exhaustive compilation of information about most of the non-silicate mineral species likely to be encountered in advanced research in the geological sciences. The book contains information on 408 minerals amenable to study with transmitted-light microscopy. The contents of the book are organized according to the traditional Dana classification of minerals. The environment of formation of each mineral is keyed to important citations to the literature. All photos used to illustrate the attributes of the minerals are placed on a DVD included with the book.

ISBN: 978-0-921294-51-1
SP 7, 528 pages, hardcover, DVD-ROM, 2011
US$125.00 (outside Canada), CDN$125.00 (in Canada)
(member price US$100.00/CDN$100.00)
Order: Mineralogical Association of Canada
THE SLIDE COLLECTION DATABASE PROJECT

Following the informations of previous newsletters, it is my pleasure to inform that George MacLeod (U. Stirling) has built a database frame to store information about thin section collections.

In case you or your institution have soil or sediment thin section collections you would be willing to inform about, you are invited to access the database and fill the fields here:

http://www.thin.stir.ac.uk/slide-collection-database-form/

This database would be very useful for students and scholars using soil micromorphology, since it is intended to contain information about types of soils or sedimentary/archaeological material that could be studied on demand all around the world.

For any request / observation, contact: g.w.macleod@stir.ac.uk.
NEWS FROM THE ARCHAEOLOGICAL SOIL MICROMORPHOLOGY WORKING GROUP

Archeological Soil Micromorphology Working Group

Lleida/Barcelona July 2012: Barcelona workshop Monday-Tuesday 9th-10th July, with bus to Lleida Tuesday evening for IWMSM Lleida 11th-13th July. Workshop programme yet to be announced, but will contain:

· Very short presentations to introduce projects/available thin sections
· Microscope time
· ‘Micromorphology self-evaluation: materials identification’ (by Ruth Shahack-Gross)

Micromorphology is a descriptive field of research based on material/mineral/feature identification which is often followed by the quantification of their relative abundances. While instrumentation such as SEM-EDS, microprobe and/or FTIR microscopy may be useful in basic material identification, such instrumentation is not always available or easily financed. Therefore most identifications rely on petrographic analysis only. A few studies in the past that looked into the accuracy and precision in mineral/grain identification focused on soils. While it can be assumed that most micromorphologists, regardless of their background, experience and geographical foci, can petrographically identify geogenic mineral grains such as quartz and calcite, in archaeology there are many materials that are more difficult to identify such as wood ash, dung spherulites, phosphate minerals and lime plaster (to name but a few).

During last year’s workshop on archaeological soil micromorphology (Pisa 2011) this topic was raised by Ruth Shahack-Gross (Weizmann Institute, Israel) and discussed by the participants in the Pisa workshop. A general agreement was reached that the community of archaeological micromorphologists should engage in self-evaluation of basic mineral grain identification. To accomplish this goal, it was decided to carry out a blind test to be performed during the coming workshop in Barcelona (July 2012).

Ruth Shahack-Gross prepared a set of thin sections including a variety of well-defined geogenic and anthropogenic materials. The Barcelona workshop participants will be encouraged to take part in the blind test. The identity of each participant will remain anonymous to all other participants, and each participant will receive a personal confidential feedback from the organizer (R. S-G). This feedback will include the overall percentage of correct identifications by the participant, noting which materials have been correctly identified. A second, general report, will also be sent to all participants in which the calculated percentage of correct identifications by all participants will be included. This report will be used to assess the accuracy of material identifications by the community, to reveal weaknesses (if present) and suggest future directions of research.

Looking forward to seeing you in Barcelona,
Ruth Shahack-Gross
Kimmel Center for Archaeological Science
Weizmann Institute of Science

(Other suggestions to r.macphail@ucl.ac.uk)

London November 2012: Training in Archeological Soil Micromorphology (5th-9th November)(Practice weeks from 12th - November)(Contact: r.macphail@ucl.ac.uk)

Suggested future workshops
· Cambridge May 2013
· Basle November 2013 (to be run in associated with DIG)
· Stirling 2014?