



Commission 1.1 Soil Morphology & Micromorphology Newsletter

October 2012, vol. 11, p. 1-22

Dear Colleague,



It is my pleasure to send you the October 2012 Newsletter, with a report and photos of the past meeting in Lleida and the announcement of several forthcoming meetings.

I want to thank you everyone for the active participation sending research notes and other useful information that can be of interest for the soil micromorphology community.

Also, pay attention to the announcement of the call for the Kubiëna Medal. I would like to encourage you to submit nominations for the 2014 Medal, that are due January 2013.

I hope you will enjoy reading all this news and find them useful !

Rosa M Poch
Chair, IUSS-Commission 1.1.

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YOUNG MICROMORPHOLOGIST PUBLICATION AWARD - 2012

The Young Micromorphologist's Publication Award is given every 2 years: at each International Working Meeting on Micromorphology, and at each World Congress of Soil Science. The purpose of this award is to encourage and promote the use of soil micromorphology by young scientists. The Award is given to one or more young scientist who has published research in the preceding 4 years, that is an outstanding contribution to the principles, methodology, or application of micromorphology.

Ex-aequo 2012 Awards were given in Lleida, during the 14th International Working Meeting on Soil Micromorphology to:

XIMENA SUÁREZ VILLAGRAN

“Experimental micromorphology in Tierra del Fuego (Argentina): building a reference collection for the study of shell middens in cold climates.” Journal of Archaeological Science, 2011, 38:588-604.

and to:

DOMINIQUE TODISCO

“Micromorphology of periglacial sediments from the Tayara site, Qikirtaq Island, Nunavik (Canada).” Catena 76, 2008. 1–21



Martine Gerard, Vice-Chair of the Commission 1.1. Soil Morphology and Micromorphology (left), handling the 2012 Young Micromorphologist Publication Award to Ximena Suárez Villagran (right).

Moreover, a Honorable Mention was given to:

NATTAPORN PRAKONGKEP

“SEM image analysis for characterization of sand grains in Thai paddy soils” Geoderma, 2010, 156:20-31

KUBIËNA MEDAL 2014 – CALL FOR NOMINATIONS

The Kubiëna Medal was introduced by Subcommission B - Soil Micromorphology of the ISSS to commemorate the memory of Walter L Kubiëna for his distinguished contribution to soil micromorphology. It is the only medal awarded by the IUSS and is given for **outstanding and sustained performance in the discipline of soil micromorphology** and to date there have been eight awards: E. Yarilova, R. Brewer, H.J Altemüller, G. Stoops, E.A FitzPatrick, L. Wilding , H. Mucher and N. Fedoroff. It is presented at the IUSS Congress. The selection committee is formed by all past awardees + IUSS Commission chair and past-chair. The next medal will be presented at the IUSS World Congress in Jeju (Korea).

Guidelines for nominations:

1. Statement of key achievements and career highlights of the nominee (1 page)
2. Curriculum vitae detailing career history and publication record of the nominee
3. Name of proposer and seconder for the nominee
4. Any other relevant information in support of the nominee
5. Full address and contact details for the nominee

Need nominations, due January 2013

Send to: rosa.poch@macs.udl.cat

REPORTS ON MEETINGS AND CONGRESSES



The 14th International Working Meeting on Soil Micromorphology, was held in Lleida, Catalonia, Spain, July, 8-14. This meeting, held every 4 years, is one of the major activities of IUSS Commission 1.1, Soil Micromorphology and Morphology.

This year, there were participants from the countries: Belgium, Brazil, Canada, Germany, France, Iran, Indonesia, Israel,

Italy, Mexico, the Netherlands, New Zealand, Norway, Poland, Russia, Spain, Switzerland, Taiwan, UK and USA. There were published 103 abstracts. During the meeting there were presented 13 invited lectures, 41 oral presentations and 49 posters.

The main institution-organizer of the conference was the Department of Environment and Soil Sciences of Lleida University. Support for this meeting was obtained by the the 700th Anniversary Fundació Universitat de Lleida, Government of Catalonia, Spanish Ministry of Education, Lab. Ferrer SA, Faculty of Geology of University of Barcelona and Catalan Institute of Agrarian Studies (*Institut d'Estudis Catalans*).

The opening ceremony was organized in the centre of Barcelona in the *Institut d'Estudis Catalans* where the chair persons of this Institute, of the Spanish Soil Sciences and of the Organizing Committee (Prof. Rosa Poch) welcomed the participants. The main and the only one plenary lecture was given by Prof. Dr. Georges Stoops "The 'fabric' of soil micromorphological research in the 20th century - A bibliometric analysis".



Prof. Georges Stoops during the Plenary Lecture



Relaxed time during the reception after the opening session

Two microscope workshops were also organized, during the conference, in Barcelona (Faculty of Geology in University of Barcelona):

- a) Archaeological Soil Micromorphology Working Group Meeting (Organizer: Richard MacPhail)
- b) Micromorphology of Glacigenic Sediments (Organizer: Jaap Van der Meer)

Meeting sessions were held in Lleida. The lectures and posters were presented on all aspects of soil micromorphology. The oral presentation was divided into five thematic sessions:

- a) Soil genesis and mineral weathering (15 presentations),
- b) Interpreting soil quality, interactions between organisms and minerals, and agro-environment sustainability (8),
- c) Soils in extreme environments and under extreme events; micromorphological methods and analyses (6),
- d) Textural features and microfacies expressing temporary and permanent soil water saturation (10),
- e) Site-formation processes in archaeology and cultural landscapes, archaeometry and geoarchaeology (15).

The posters were available during whole conference and were presented during two separated sessions.

The mid-conference fieldtrip named as “Soils on stone-bench terraces. The best olive oil of the world: the liquid gold of Les Garrigues” was connected with the soils developed on different rocks and sediments near the ancient archaeological site (town Arbeca, the Garrigues district) and different-age olive terraced fields (area of Les Garrigues).



Excursion to Les Garrigues area

The post-conference articles will be published in the Spanish Journal Soil Science (eds. Dr Irina Kovda (Moscow, Russia) and Dr Curtis Monger (New Mexico, USA)) and in Quaternary International (Ed. Richard MacPhail, London)

The next 15th International Conference on Soil Micromorphology will be held in Mexico in 2016, which was presented by Sergey Sedov during the Business Meeting of the Commission.

Przemyslaw Mrozeck
Secretary IWMSM 2012



Group photo of the meeting participants

NEXT MEETINGS AND CONGRESSES



Paleosols, pedosediments and landscape morphology as environmental archives

10-15 August, 2013, Kursk & Voronezh regions, Russia

ORGANIZERS:

*Institute of Geography, Russian Academy of Sciences
Moscow State University, Faculty of Soil Science, Soil Science Institute
V.V. Dokuchaev Soil Science Institute
Institute of History of Material Culture, Russian Academy of Sciences
Kursk State University
Lipetsk State University
Government of Kursk region, Ecological Department
V.V. Alekhin Central Chernozemic State Biospheric Reserve
Natural Architectural-Archaeological Museum-Resort "Divnogor'e"*

*IUSS Commission on Paleopedology
Dokuchaev Soil Science Society, Russia*

GENERAL INFORMATION AND TASKS

XIIth ISFWP is planned as a traditional activity of IUSS Commission on Paleopedology which implicates joint scientific symposium and field seminar. A backbone issue both for field and academic parts of the event is *Soil, geomorphic, sedimentary records of Pleistocene and Holocene climatic changes*.

The main task of the field seminar is to demonstrate the unique loess-paleosol sections, Paleolithic sites, alluvial and colluvial pedosedimentary sequences including Late Pleistocene and Holocene paleosols.

A special attention will be paid also to famous Russian Chernozems. Classical views and modern concepts concerning their genesis will be discussed near spectacular sections of these soils. Paleoenvironmental implications and Pre-Holocene heritage of Chernozems will be discussed. We consider the field part of the action to be exiting and important opportunity for getting joint field experience and open discussions on paleosol genesis and paleoenvironment.

The field part consist of pre-conference tour in Kursk region (August 10, 11) and post-conference tour in Voronezh region (August 14, 15) combined with sightseeing.

Preliminary list of sessions (key topics) for scientific symposium is set below (will be corrected in accordance with feedback from participants):

1. Loess- and tephra-paleosol sequences;
2. Alluvial and colluvial soil-sedimentary sequences;
3. Paleosols and pedosediments of human habitats;
4. Surface paleosols and relic features in modern profiles. Chernozems as paleo-environmental archives;
5. Pre-Quaternary paleosols: paleoecology and post-burial changes;
6. Biological markers in paleosols

REGISTRATION FEE AND OTHER PAYMENTS

Registration fee for the conference (August 12 & 13) is 120 € (discount for students and post graduates is supposed depending on funds of the conference).

Pre-conference tour (August 10 & 11) – 90 €

Post-conference tour (August 14 & 15) – 140 €

For those who will participate in both parts of the field seminar (pre-conference and post-conference tours) the total fee for two field trips is 200 €.

IMPORTANT DATES

December 31, 2012 - preliminary registration for scientific sessions and field tours (number of participants of field excursions is limited) (via conference site paleopedology.msu.ru/paleopedology2013)

January 15, 2013 - 2nd Circular (according to pre-registration)

March 31, 2013 - registration, abstracts submission, and payments (banking details will be announced in the second circular) have to be completed

CONTACTS

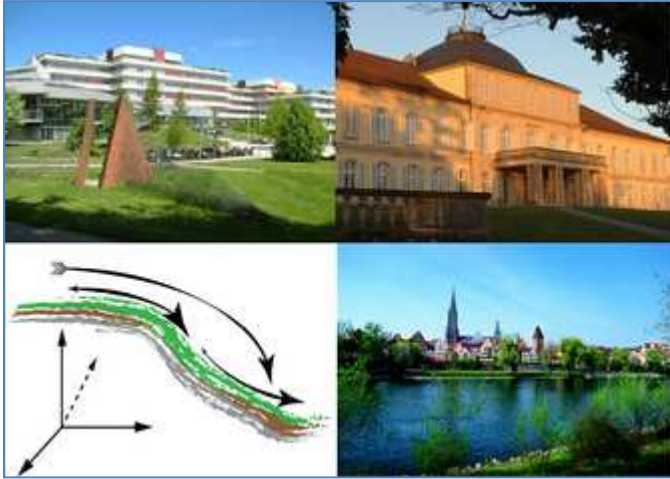
e-mail: paleopedology2013@gmail.com Dr. Maria Bronnikova, secretary of the Organizing Committee

fax: [+7-495-9590033](tel:+74959590033)

Please visit the conference website paleopedology.msu.ru/paleopedology2013 for detail information and updates.



- 1 – Late Pleistocene loess-paleosol sequence in Alexandrovskiy quarry;
- 2 – Feather grass steppe;
- 3 –Valdai loess section with Chernozem profile, Kursk biosphere station ;
- 4 – Cretaceous landscapes in Divnogor'e;
- 5 – Alluvial soil-sedimentary sequence in the floodplain of Don River, Kostenky;
- 6 – Don River and soil-sedimentary sequence in its precipitous bank;
- 7 – Kostenky-14, archaeological excavations.



Soils in Space and Time

Divisional Meeting

Ulm - Germany

September 30th - October 4th 2013

<https://iuss-division1.uni-hohenheim.de/>

Chair: Karl Stahr (U Hohenheim)

Division Symposia:

1. Soils of arid lands
2. Structure of soil landscapes

Commission 1.1. Symposia:

- 1.1.1 Soil structure and OM sequestration: what can micromorphology tell us?
- 1.1.2 Ultra-micromorphological and synchrotron techniques applied to soil micromorphology

Excursions:

Besides local tours the meeting offers the following excursions:

1. Landscape history, soil development and paleolithic caves along the rivers Blau and Danube
2. Soil on Tertiary (Neogene) sediments and relic and modern development (Hochsträß and Bussen)
3. Meteoric crater of "Nördlinger Ries"
4. Famous peatland nature reserve of Federsee
5. Fen area of "Donauried"
6. Valley development (Kocher, Brenz) and palaeosoils of the Swabian Alb



<http://www.20wcss.org/>

Proposed symposia by Commission 1.1. for the 20th Congress Soil Science –Jeju (Korea), June 2014.

The role of environment on soil formation: morphological indicators.

To show present research on morphological and micromorphological evidences of relationships between soil formation processes and environmental factors including humans, at any time and spatial scales.

Interactions between soil structure, living organisms and organic matter

To show the spatial relationships between soil structure, porosity and different types of organic matter in soils, as affected by biological activity, soil mineral composition, soil/water relationships or any other environmental factors. In situ bioremediation effects on polluted soils would be interesting to compare with natural process on unpolluted soils.

Micromorphological answers to palaeopedological and polypedogenetic questions

(Joint meeting with the Paleopedology commission) Objectives will be to identify micromorphological properties of paleosols and polygenetic soils that can be used as indicators of palaeo-environmental conditions.

PUBLICATIONS

Paleosols and Geoarchaeology I and II

Editors: Elizabeth Solleiro-Rebolledo, Emily McClung, Jorge Gama, Sergey Sedov

These special volumes consist mostly of the papers presented at:

International Workshop “Micromorphology for paleopedological and geoarchaeological research”, within the International Conference “Soil Geography: New Horizons,” in November 2009 in UNAM, Mexico City.

Publications are in English and Spanish, many of them are from postgraduate students of UNAM, who thus had chance to present internationally the results of their PhD projects.

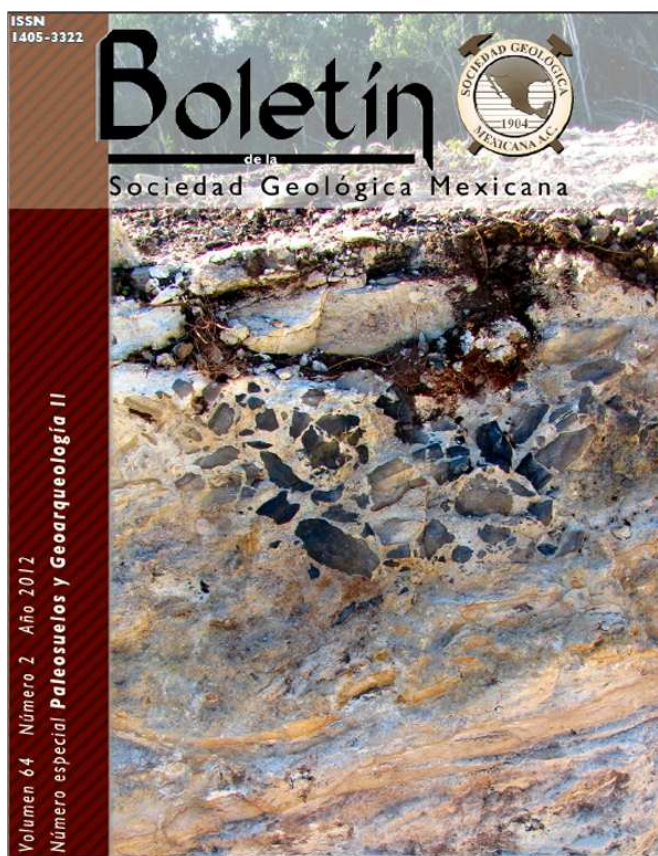
These volumes will promote utilization of microscopic methods in paleopedological and soil-archaeological research in Latin America.

Full versions of all papers are online!

http://boletinsgm.igeolcu.unam.mx/igl/index.php?option=com_content&view=article&id=474:volumen-64-numero-2-2012&catid=149:epoca4&Itemid=74

and

http://boletinsgm.igeolcu.unam.mx/igl/index.php?option=com_content&view=article&id=425:volumen-64-numero-1-2012&catid=149:epoca4&Itemid=74



G. Stoops informed about this project during the business meeting of Commission 1.1. last July in Lleida. During a micromorphology/archaeology workshop in Sondrio (Italy) (2000) it was concluded that the “Handbook” of Bullock et al. (1985) needs some supplements for its use in archaeology, e.g. with respect to stratigraphical concepts. A first proposal was presented at the IWMSM in Gent (2001) by K. Milek but not continued. During the micromorphology/archaeology meeting in Poviglio (Italy) (2009) the question was raised again by G. Stoops. It was decided to set up a project to prepare a book, very tentatively called “Atlas”, treating the application of micromorphology in archaeological sciences. G. Boschian, J. Becze Déak and G. Stoops were persuaded to act as editors, and K. Milek (absent) would be asked to join this group. The next month the planning started, authors were contacted and work organised by the editors. Some authors prepared meanwhile excellent contributions within the deadlines, others didn't meet the deadlines, didn't reply anymore, or forwarded papers that needed much improvement. Since spring 2011, however, several editors could not do the necessary work because of other commitments. In spring 2012 Judit Becze-Déak resigned for the same reason as editor. In order to save the project, G. Stoops agreed to take over the general management, assisted by a new editor, Cristiano Nicosia. In autumn 2012 a reorganisation will be proposed and where necessary new authors invited to fill existing gaps or to replace authors no longer responding.

All correspondence with regard to the “Atlas” should be directed to archaeomicro@gmail.com

RESEARCH NOTES AND RECENT PAPERS

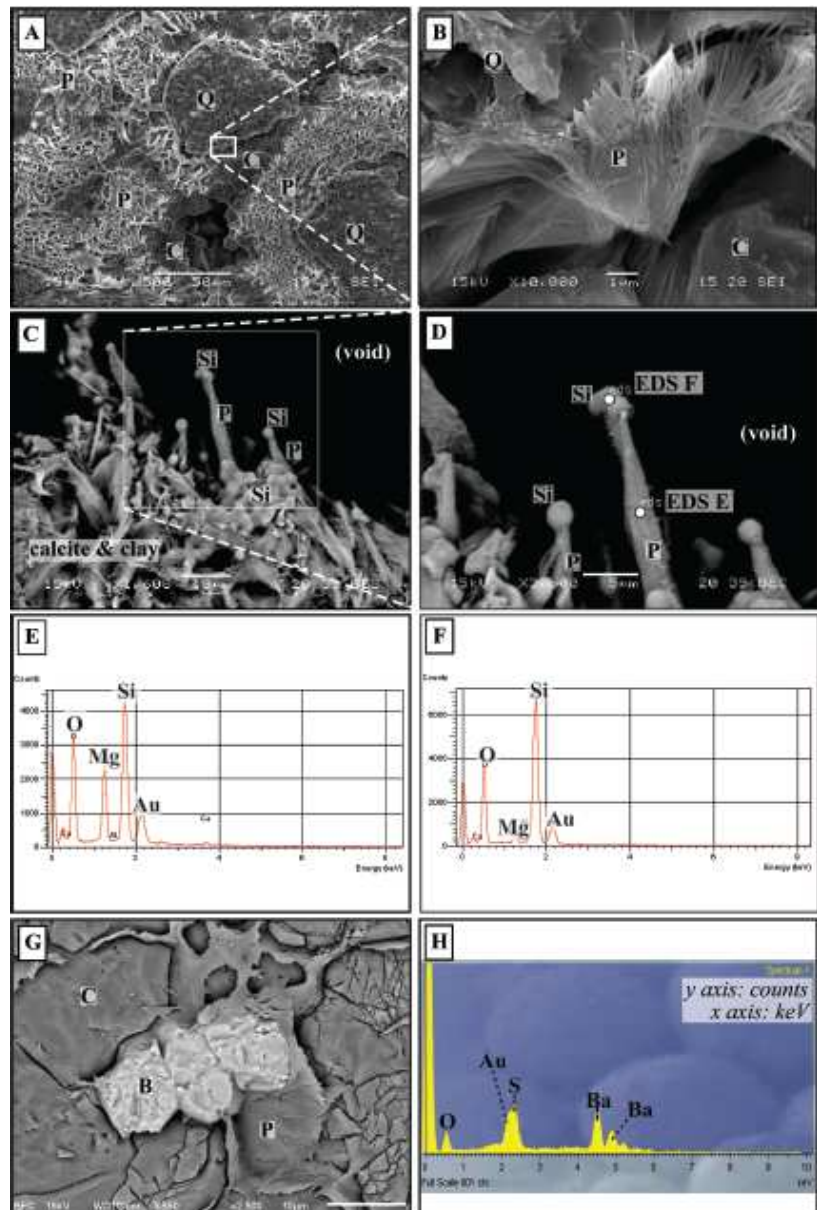
Conceptual Mineral Genesis Models for Calcic Pendants and Petrocalcic Horizons, Nevada

By: Colin R. Robins, Amy L. Brock-Hon and Brenda J. Buck

Soil Sci. Soc. Am. J. doi:10.2136/sssaj2012.0073

We use the very old, extant, Stage VI Mormon Mesa petrocalcic soil profile in southern Nevada to: (i) present a conceptual model summarizing known spatial and temporal relationships among authigenic calcite (or low-Mg calcite), palygorskite and/or sepiolite, and amorphous silica and (ii) adapt a second model to describe the occurrence of pedogenic barite and the effect of climate oscillations on soil mineralogy at Mormon Mesa. These conceptual models, one compiled from previous research, one built from new data in this study, directly address the importance of dust to soil genesis, especially the control of salt flux and high pH on Ba, Si, and Al mobility in alkaline soil solutions. Authigenesis of calcite and palygorskite/sepiolite creates positive feedbacks with soil solution chemistry that drives further mineralogical development. We explain the occurrence of pedogenic barite at Mormon Mesa based on higher Ba solubility and translocation into the soil profile with increased concentrations of Cl and Mg in soil solutions during interpluvial climates. Development of integrated, mineral development models illustrates individual system components and/or processes that should be targeted for future chemical, biological, geochronologic, or micromorphological study, and provides a basis for comparison of calcic soil genesis from disparate sites around the world.

Scanning electron microscopy-energy dispersive X-ray spectroscopy (SEM-EDS) data. (A) Matrix of carbonate (dark) and mesh-like Mg-clays (light) surrounding detrital quartz grains. (B) Close-up of palygorskite immediately adjacent to quartz grain surfaces. (C) Sepiolite laths grown into a void and capped by hemispheres of amorphous (opaline) silica. (D) Close-up of image C, showing EDS collection sites for E and F. (E) The EDS spectrum of sepiolite (Si, Mg, O) with trace amounts of calcite (Ca, C, O). (F) The EDS spectrum of silica (Si, O), with trace amounts of sepiolite and calcite. (G) Pedogenic barite, palygorskite/ sepiolite, and calcite in the matrix of the massive horizon. (H) The EDS spectrum confirming presence of barite (Ba, S, O) with trace amounts of clay (Si, Mg not labeled). B = Barite, C = Calcite, P= Palygorskite and/or Sepiolite, Q = Quartz, and Si = amorphous silica.



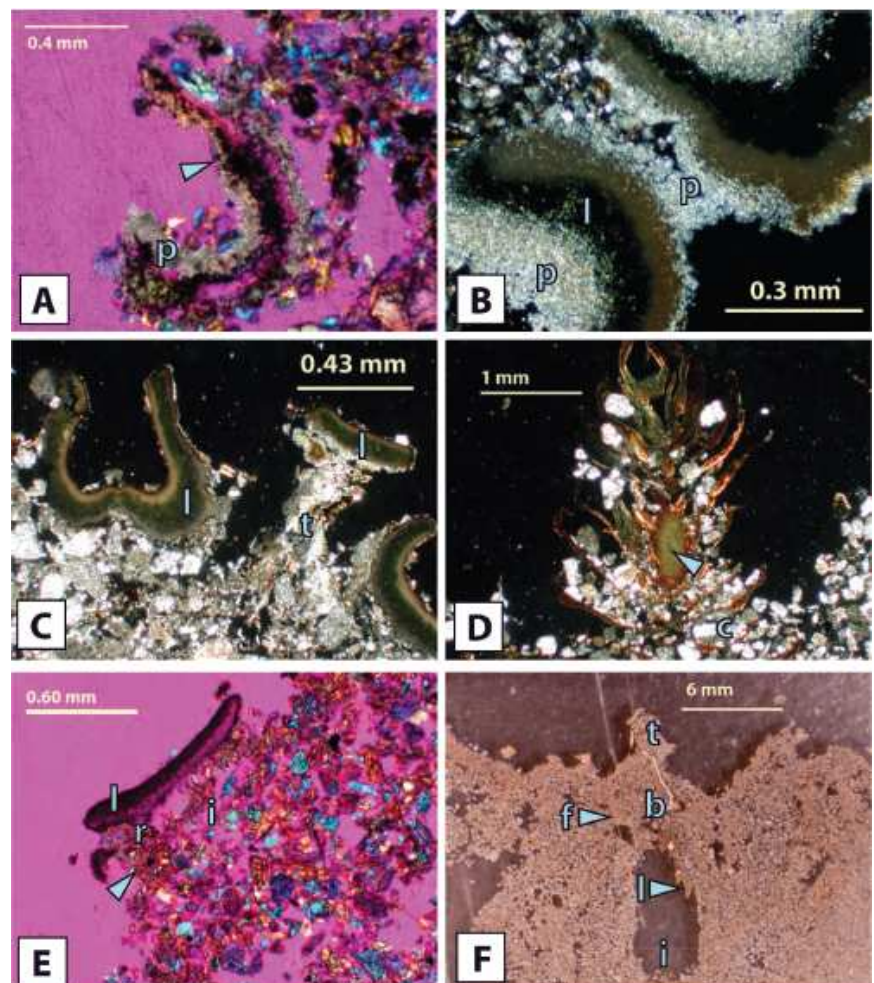
Biological Soil Crusts in the Mojave Desert, USA: Micromorphology and Pedogenesis

By: Amanda J Williams, Brenda J Buck and Mengesha A. Beyene

Soil Sci. Soc. Am. J. doi:10.2136/sssaj2012.0021

Biological soil crusts (BSCs) are bio-sedimentary complexes that play critical ecological roles in arid landscapes; however, the interactions between component biota and sediments are poorly understood. A detailed micromorphological investigation of BSC development and crust microstructure in the Muddy Mountains Wilderness Area, Nevada, examined features in thin section using petrographic microscopy, light microscopy, scanning electron microscopy, and energy dispersive x-ray spectroscopy. The >1800 microscopic observations were linked to crust macroscale features and soil geomorphology. Complex bio-sedimentary structures of BSCs reflect a dynamic genetic history and diverse formative processes, including: (i) stabilization and authigenic mineral precipitation; (ii) wetting–drying and expansion–contraction; (iii) dust capture; (iv) microscale mass wasting; and (v) vesicular (Av) horizon formation. A new conceptual model for hot deserts illustrates how these processes co-develop with BSC succession, during countless wet–dry cycles, to build up pinnacle microtopography while simultaneously forming Av horizons in the bio-rich and bio-poor zones. Complex surficial and internal bio-sedimentary structures, which vary as a function of crust morphology, trap surface water for uptake by crust organisms, while dust influx provides a source of nutrients. These phenomena influence landscape-scale water dynamics and biogeochemical cycling, increasing the availability of soil resources during times of biotic stress. Biological soil crusts uniquely facilitate the accumulation, morphology, and ecosystem function of dust and should, therefore, be considered critical agents in arid pedogenesis and landscape development.

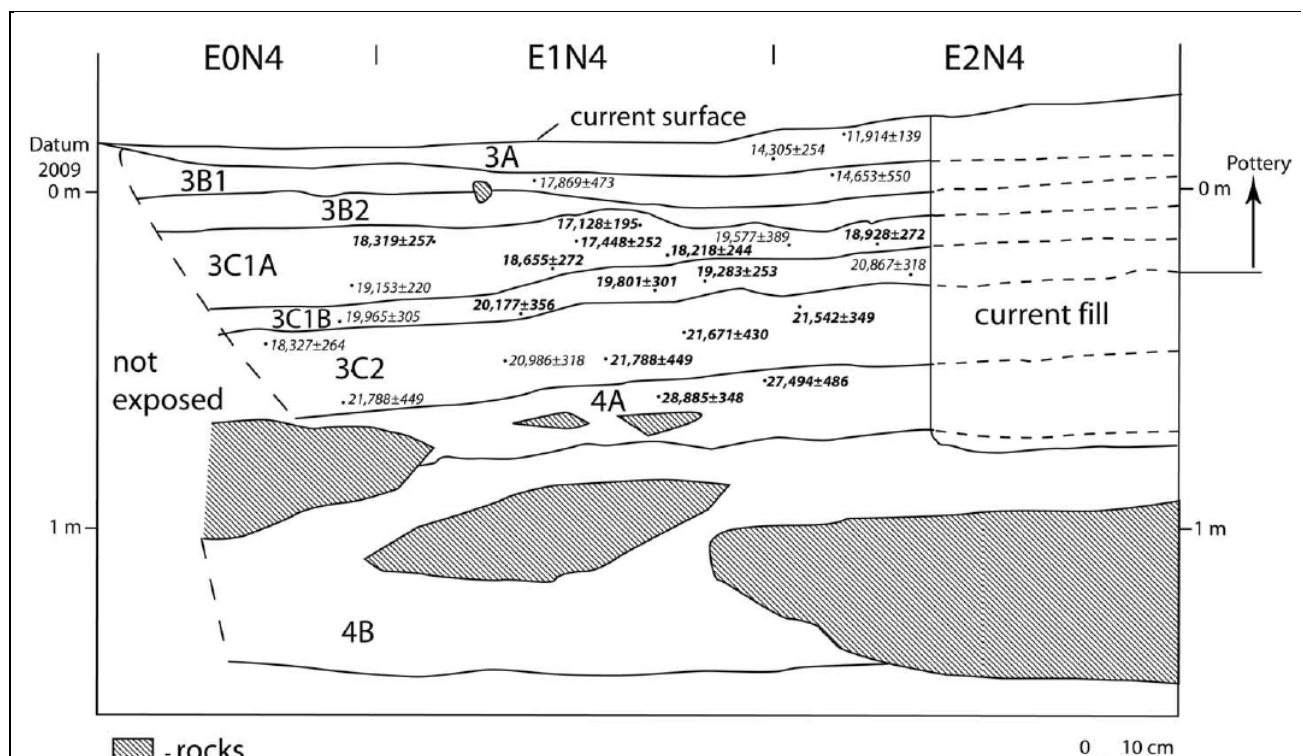
(A) Calcium carbonate precipitates (p) permeate cyanobacterial extracellular polymeric secretions (arrow) (cross-polarized light [XPL] image) and (B) cover lichen squamules (l) (petrographic image); (C) dry lichen squamules (l) detach from the soil and top a bio-sediment tower (t) (petrographic image); (D) coarse grains rest among “tall” moss leaves (arrow) (petrographic image); (E) a lichen squamule (l) with rhizoidal rhizines (r) tops a bio-sediment pedestal (arrow) with interior voids (i) (XPL image); (F) a tower (t) topped by a lichen squamule overlies a bio-sediment bridge (b) and a large, irregular void (i), composed of silt and clay grains, containing a lichen thallus (l); a fine-grained lamina lies along the left side of the sediment bridge (f) (light microscope image). Images are oriented vertically.



Early Pottery at 20,000 years ago in Xianrendong Cave, China.

By: Xiaohong Wu, Chi Zhang, Paul Goldberg, David Cohen, Yan Pan, Trina Arpin and Ofer Bar-Yosef, 2012. *Science*, 336, 1696-1700. DOI: 10.1126/science.1218643

The invention of pottery introduced fundamental shifts in human subsistence practices and sociosymbolic behaviors. Here, we describe the dating of the early pottery from Xianrendong Cave, Jiangxi Province, China, and the micromorphology of the stratigraphic contexts of the pottery sherds and radiocarbon samples. The radiocarbon ages of the archaeological contexts of the earliest sherds are 20,000 to 19,000 calendar years before the present, 2000 to 3000 years older than other pottery found in East Asia and elsewhere. The occupations in the cave demonstrate that pottery was produced by mobile foragers who hunted and gathered during the Late Glacial Maximum. These vessels may have served as cooking devices. The early date shows that pottery was first made and used 10 millennia or more before the emergence of agriculture.



The stratigraphy of the Xianrendong cave west section. Dates indicated are calibrated cal yr B.P. dates calculated by CalPal_HULU 2007.

Stable carbon and oxygen isotopic compositions of wood ash: an experimental study with archaeological implications

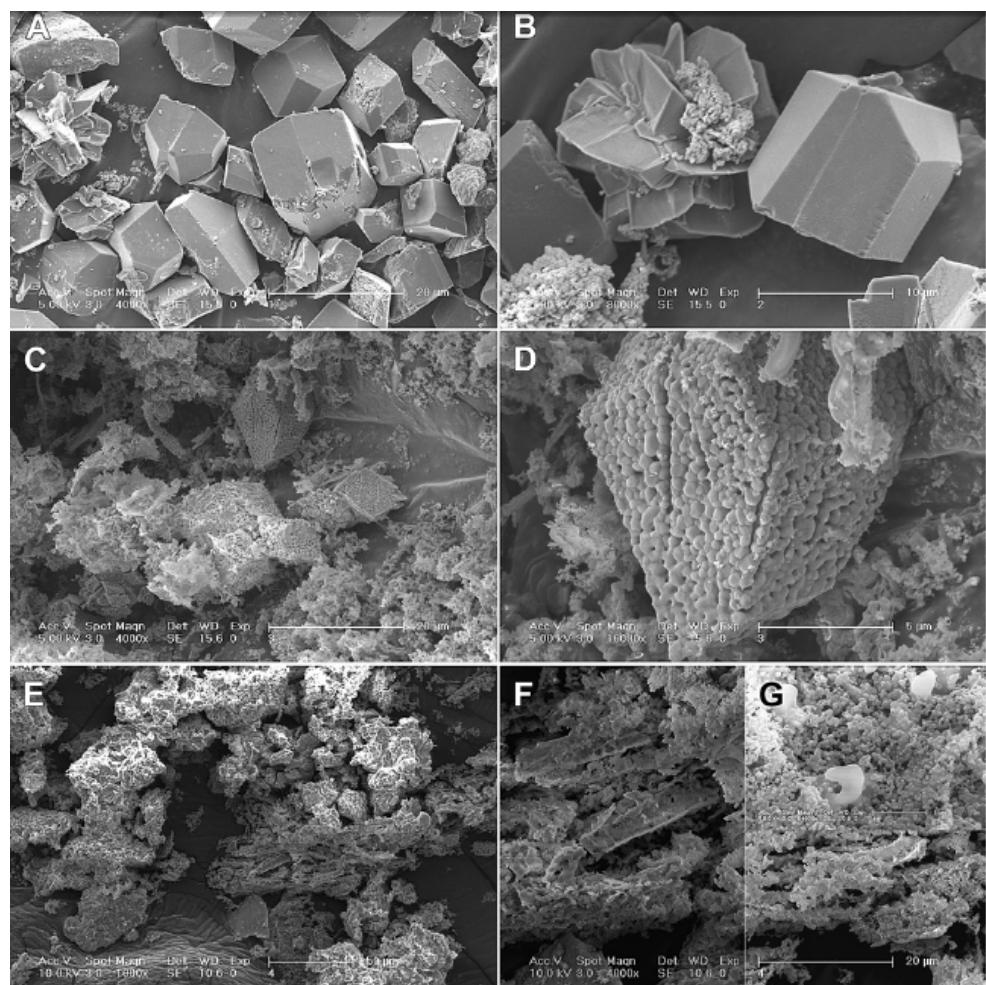
By: Ruth Shahack-Gross and Avner Ayalon

Journal of Archaeological Science <http://dx.doi.org/10.1016/j.jas.2012.06.036>

Wood ash, composed mainly of the mineral calcite, is an important component in many archaeological sites. Identification of wood ash in the archaeological record is often difficult due to mixing of ash with other calcitic components of geogenic origin and/or due to diagenetic changes. A recent empirical study using the stable isotope compositions of carbon (^{13}C) and oxygen (^{18}O) in wood ash enabled the identification of mixtures of wood ash with geogenic calcite and to follow diagenetic changes due to partial dissolution and re-precipitation of ash in two prehistoric cave sites in Israel. Little however is known about the processes responsible for the isotopic

compositions of wood ash in relation to formation at various temperatures and the influence on isotopic composition of ash from a variety of plant species. Here we present an experimental study of wood ash formed by burning three C3 tree species and one C4 desert bush at different temperatures. The results indicate that there are significant differences in the isotopic compositions of carbon and oxygen between wood ash that forms by combustion at a relatively low temperature (500°C) and at a higher temperature (900°C). In addition, we show that the isotopic composition of carbon and oxygen in high temperature wood ash approaches equilibrium over a period of several months and that the carbon isotopic composition of low temperature wood ash may reflect the photosynthetic pathway of the burnt woody species. Lastly, we show that the isotopic compositions obtained from wood ash prepared at different temperatures do not reflect a temperature dependent fractionation process, but a mixing line between calcite that formed by low temperature combustion and calcite formed by high temperature combustion which later underwent recarbonation with atmospheric CO₂. In addition, we suggest that exchange processes may possibly occur during combustion between decomposing calcium-oxalate and atmospheric O₂, CO₂ and CO. The archaeological implications of this study are discussed in relation to identification of wood ash in the archaeological record, identification of fuel sources and burning temperatures, and diagenetic changes expected in karstic cave environments. The method presented here can be applied at any archaeological site.

ESEM images of (A) unburnt calcium oxalate crystals produced from fresh oak leaves showing the variety of crystal shapes, (B) higher magnification of (A) showing rhombic (twinned) and druse (crystal aggregates) bodies from fresh oak leaves, (C) low magnification of ash produced from oak leaves burnt at 500°C showing the powdery nature of the ash with specific rhombic bodies which are pseudomorphs of calcite after calcium-oxalate crystals, (D) higher magnification of (C) showing that a pseudomorph is composed of fused nanometer-sized crystallites along with cracks and voids, (E) low magnification image of ash produced from oak leaves ashed at 900°C



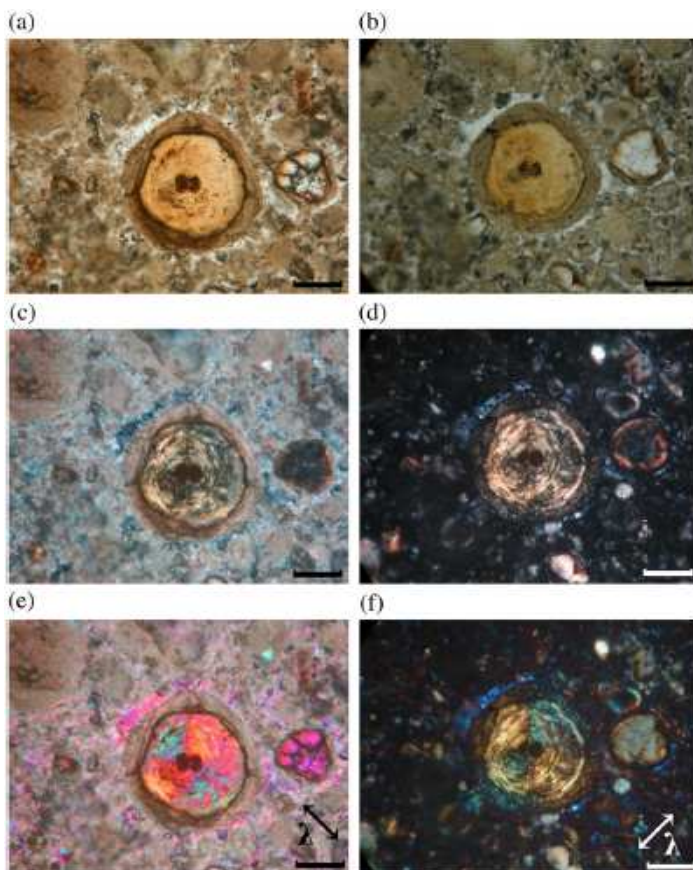
and let to react with the atmosphere for 3 months showing the powdery nature with absence of rhomb-shaped pseudomorphs, (F) magnification of (E) showing formation of tubular shapes not found originally in oxalates from oak leaves, and (G) magnification of (F) showing sub-micron fused droplets that form the bulk of high temperature ash.

A micromorphological view through a Namaqualand termitaria (*Heuweltjie*, a Mima-like mound)

By: M.L. Francis, F. Ellis, J.J.N. Lambrechts and R.M. Poch

Catena, <http://dx.doi.org/10.1016/j.catena.2012.08.004>

'*Heuweltjies*' occur throughout Namaqualand and the western and southern Cape coasts: broad, low-relief termitaria of the harvester termite *Microhodotermes viator* which show different vegetation patterns to the surrounding soils, distinguishable even in satellite images. There is a direct relationship between soil hardpan occurrence and the *heuweltjies*. Characteristically in the semi-arid areas the hardpans grade outwards from a central sepiolitic petrocalcic horizon laterally through '(petro) sepiolitic/palygorskitic' (variable in the degree of cementation) to the petroduric horizon on the edges, in a landscape in which these hardpans are otherwise absent. The aim of the study was to investigate the genesis of these hardpans associated with the *heuweltjie* mound, with a particular focus on the build-up of calcite and sepiolite. The micromorphological study examined a transect through a representative sepiolite-bearing *heuweltjie* on the coast near the Olifants River mouth, and revealed evidence of termite activity in the central (petro)calcic part of the mound. This concentration of calcite and Mg-rich clay in the centre can be explained by termite foraging, as the regionally characteristic Ca- and Mg-rich foliage is moved into the centre of the mound, facilitating the precipitation of calcite and sepiolite as bacterial decomposition and subsequent leaching modify the soil solution in the mound. The increase in coarse/fine ratio from the centre outward showed that accumulation of calcite and sepiolite displaced the original sand matrix by a greater degree than the silica accumulation, consistent with the topographically raised surface in the centre. Limpid yellow, low birefringent nodules, some with pseudonegative uniaxial interference figures, showed a fibrous nature under ESEM, and their low Ca, and molar Mg/Si ratios of 0.64 to 0.68 (ESEM-EDX) were consistent with sepiolite. The presence of the sepiolite, with its Mg-rich composition and hydrophilic character, together with organic acids generated from the vegetation collected by the termites, is considered to be an explanation for the



formation of 'oids', radial calcite crystals associated with a core of sepiolite. Colourless, non-calcareous, pseudo-uniaxial negative spherulites were present in fresh termite excrement from an active *heuweltjie* near Stellenbosch. These were either produced in the termite gut itself or had been ingested along with herbivore dung by the termites. The presence of faecal spherulites in termite excrement is significant since it shows that faecal spherulites can be distributed over a wider area than that directly associated with mammalian herbivores.

Photomicrographs showing effect of 1 M HCl etching of on granular microstructure and on a micrite-coated limpid nodule with pseudo-negative uniaxial interference figure (sample 2A, calcrete in centre of *heuweltjie*). Way-up is top of page, scale 0.1 mm. (a) Before etching, PPL. (b) After etching, PPL. (c) Before etching, XPL. (d) After etching, XPL. (e) Before etching, XPL, λ -plate, fast-direction NW-SE. (f) After etching, XPL, λ -plate, note that fast-direction is opposite to (e).

NEXT COURSES



II Curso Latinoamericano de Micromorfología de Suelos y Técnicas Complementarias

*II Latin-American course of Soil
Micromorphology and
Complementary techniques*

Universidad Nacional de Colombia
Departamento de Geografía

***Bogotá (Colombia) – August 04- 10
2014***

The first Soil Micromorphology course was in Medellín, Colombia in August 2011. The second edition will take place at the Geography Department and Geosciences Department of National University of Colombia, Bogotá, Colombia.

The main aim is to extend the knowledge of soil micromorphology to Spanish speaking audience. The course will deal with micromorphological techniques, electron microscopy, clay sand mineralogy, with special focus on tropical conditions. The course is aimed at researchers on Agronomy, Geography, Geology, Archaeology, Biology and environmental sciences in general. The course will be given in Spanish.

Training and practice Week: August 04th - 08th

Field Practice: August 09th - 10th

For more information, ask William Posada or Juan Carlos Loaiza:
willyposada@yahoo.es
jcloaiza@unal.edu.co

JOB OFFERS

Eveha is now one of, if not the largest, private commercial archaeology firm in France (we have over 100 full time employees) and we work throughout France and in the near east and the Caribbean. We currently employ one full time geo-archaeologist, but are looking to hire a second, full time, or CDI as they say here, with a specialisation in micromorphology. Our requirements are a reasonable theoretical and practical background in micromorphology (both in the lab and the field). They would also need to be fairly self-motivated and organised. I also think that if we find the right person there is the money and desire to set up the facility to produce the thin sections in house. An ability to write technical reports, and to write them in French is also desirable (it could be a second language as we have in house editing).

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Attaché scientifique

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ARCHAEOLOGICAL SOIL MICROMORPHOLOGY WORKING GROUP

We had a very successful and well attended workshop at Barcelona 9th-10th July 2012 (joint organisers: Mercè Bergadà (University of Barcelona) and Richard Macphail (University College London)). Many attendees contributed oral and poster presentations to Session 5 at the IWMSM later that week (12th-13th July) at Lleida. Selected papers (Proceedings: brief title 'Site Formation') will be published in Quaternary International; authors of posters and oral papers have already been sent QI publication information (Guest Editor: Richard Macphail [r.macphail@ucl.ac.uk]; deadline for submissions to QI January 31st 2013). Authors please submit direct to QI, using information already circulated.

Future Workshops:

Cambridge, UK: May 2013 – exact dates yet to be decided.

Basel, Switzerland: 2nd-7th September 2013 (week also including DIG – Developing International Geoarchaeology meeting)

2014 and 2015: no firm data

Mexico City, Mexico: 2016 (~July: in association with 15th IWMSM)

TRAINING IN ARCHAEOLOGICAL SOIL MICROMORPHOLOGY (Institute of Archaeology, University College London; contact: r.macphail@ucl.ac.uk)

Training week (5th-9th November 2012 – places still available)

Practice week (12th-16th November 2012 – full)

(Training Course at UCL, November 2013, anticipated)

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