



## Commission 1.1 Soil Morphology & Micromorphology Newsletter April 2013, vol. 12, p. 1-22

Dear Colleague,

Here you have the spring (Northern Hemisphere) newsletter. Together with the nice weather we have many news to share.

The first one is a very sad one: Nicolas Fedoroff, Kubiëna medal 2010, passed away on February the 14<sup>th</sup>. I'm grateful to our Russian colleagues for preparing the obituary that you will find in the first place. We will miss him, as a scientist and also as a friend. All who came to the Lleida meeting had the chance to enjoy his company and his participation to the meeting and to the field excursion for the last time. Our warmest greetings to Marie-Agnès Courty and rest of his family and friends.

I hope all this news will be useful and will help spreading the value of soil micromorphology!

Rosa M Poch  
Chair Comm. 1.1. Soil Morphology and Micromorphology - IUSS  
rosa.poch@macs.udl.cat

### **PLEASE, VISIT THE COMMISSION 1.1. WEBSITE**

<http://loess.umcs.lublin.pl/micro.htm>  
Maintained by Przemyslaw Mroczek, Dept. Physical Geography and Paleogeography, Maria Curie-Skłodowska University, Poland  
Send any updates/information to Przemyslaw Mroczek <[loess@poczta.umcs.lublin.pl](mailto:loess@poczta.umcs.lublin.pl)>  
& Rosa M. Poch [rosa.poch@macs.udl.cat](mailto:rosa.poch@macs.udl.cat)

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## IN MEMORIAM NICOLAS FEDOROFF

### NICOLAS FEDOROFF (1934-2013) - RUSSIAN? FRENCH? WORLDWIDE!



Nicolas Fedoroff passed away on February 14, 2013. We lost a great personality, a good friend and a true scientist.

Nicolas was born 18 October, 1934 in Paris, France. His Russian ancestors, originally living in St.Petersbourg, had immigrated to France after the Revolution of 1917. Nicolas spent most of his life in the Paris region of France, but obviously kept the Russian spirit of mind. The combination of Russian mentality, French education and worldwide experience, together with scientific curiosity and extraordinary working capacity gave the phenomenon of Nicolas Fedoroff.

Nicolas obtained his first field experience in soils from his aunt – Vera Malisheva, famous French Quaternary geologist and colleague of V. Agafonoff. After Nicolas graduated as Ingénieur Agronome in Paris from INA P-G (Institut National Agronomique Paris-Grignon) he remained for the rest of his career at this famous agronomical Institute (INA P-G), which is closely associated with the INRA (Institut National de la Recherche Agronomique). There he organized the highest quality micromorphological laboratory, performed his research and raised a number of French and foreign specialists in micromorphology including Paul Goldberg, Bryan Bunting, Albert Solé Benet, Marie-Agnes Courty, Juan Herrero, Hema Achyuthan, Zhengang Guo, Hamdi Bel Hadj, Héctor Morrás and Víctor M. M Ordaz Chaparro. Nicolas enjoyed new experiences and his investigations covered a major part of the world, ranging from European soils “sols léssivés”, to tropical soils of Africa, Indian Ferricretes, soils buried under kurgans in Russian steppe, podzols of Québec, tepetates in Mexico, and more.

His publications on soil processes such as clay illuviation, specific soil types, pedofeatures – ferricrete and calcic features, are well known and often cited. Some of them became internationally recognized classic papers in micromorphology and paleopedology. Nicolas was one of the first to promote the usefulness of micromorphology in paleopedology.

Nicolas made a great input to the general development of conceptual micromorphology and he contributed to the implementation of the genetic approach to paleopedology. He was at the origin of paleopedology, archeological and cosmic micromorphology. From 1969, Nicolas was strongly involved in the organizational activities of the International Union of Soil Sciences (former ISSS) and participated in the large number of micromorphological meetings. In 1985 he hosted the

7th International Working Meeting on Soil Micromorphology in Paris, which was one of the largest with more than 160 participants. The proceedings of this meeting, edited by Fedoroff, Bresson and Courty, are still in demand.



Photo: At the beginning of paleopedology (Joint ISSS and IUQR Symposium on the Age of Parent Materials and Soils, Staircase of the Institute for the Tropics, Amsterdam, The Netherlands, 1970). The following participants have been recognized by G Stoops, H Múcher, R Dudal and M Gerasimova<sup>1</sup>:



<sup>1</sup> If you recognize any of the numbered persons or see any mismatch, please tell Rosa M Poch and it will be corrected in the next newsletter.

As co-founder and active participant of the International Working Group on Soil Micromorphology, he contributed to the review and standardization of the terminology and his efforts resulted in the publication of the Multilingual Glossary of Micromorphological Terms (1979). Later he became one of the co-authors of the famous Handbook for Soil Thin Section Description (1985). He was designated Doctor Honoris Causa by the University of Lleida in 1986.

Being fluent in French, English and Russian, Nicolas assisted with the exchange of ideas. Russian scientists are especially thankful to Nicolas for his propagation of the Russian pedological (genetic) school, which was often concentrated within the former USSR.

The International Society awarded Nicolas the Kubiëna Medal during the 19th IUSS Congress in Brisbane, Australia (2010) for an outstanding and sustained contribution to Micromorphology.

After retirement, Nicolas lived with his family in the south of France. He was active till the last. One of his most recent activities was the review of papers for the special issue of the Spanish Journal of Soil Science dedicated to the International Micromorphology Meeting in Lleida, Spain in July 2012. Nicolas was also expected to submit his paper, before he passed away.

Nicolas is survived by his wife Marie-Agnes Courty, his two sons - Alexis and Samuel, and his daughter Sophie. Many of us - friends, colleagues and students - have sent our symbolic small bags of soil to accompany Nicolas in the family grave in the Orthodox cemetery of Sainte-Geneviève des Bois in the Paris suburbs, a little land of Russia co-founded by Nicolas' grandfather soon after he immigrated from Saint-Petersburg.

Irina Kovda

Nicolas Fedoroff devoted most of his life to soil micromorphology. He started in the late 1960-ies, and his last lively presentation took place in summer 2012 in Lleida. There is perhaps something symbolic in the topics that were the first and the last: both were related to clay translocation and textural features as identified, characterized and interpreted in thin sections. There is no doubt that illuviation remained a research topic of great importance for Nicolas throughout his career. In 1967 he published a paper on the application of micromorphology to paleosols, and since then paleopedology and the mechanisms of pedogenetic processes were his major scientific interests. With a double background in Geology and Soil Science, paleopedology was for Nicholas the research field that provided a full access to the long- term history of soils.

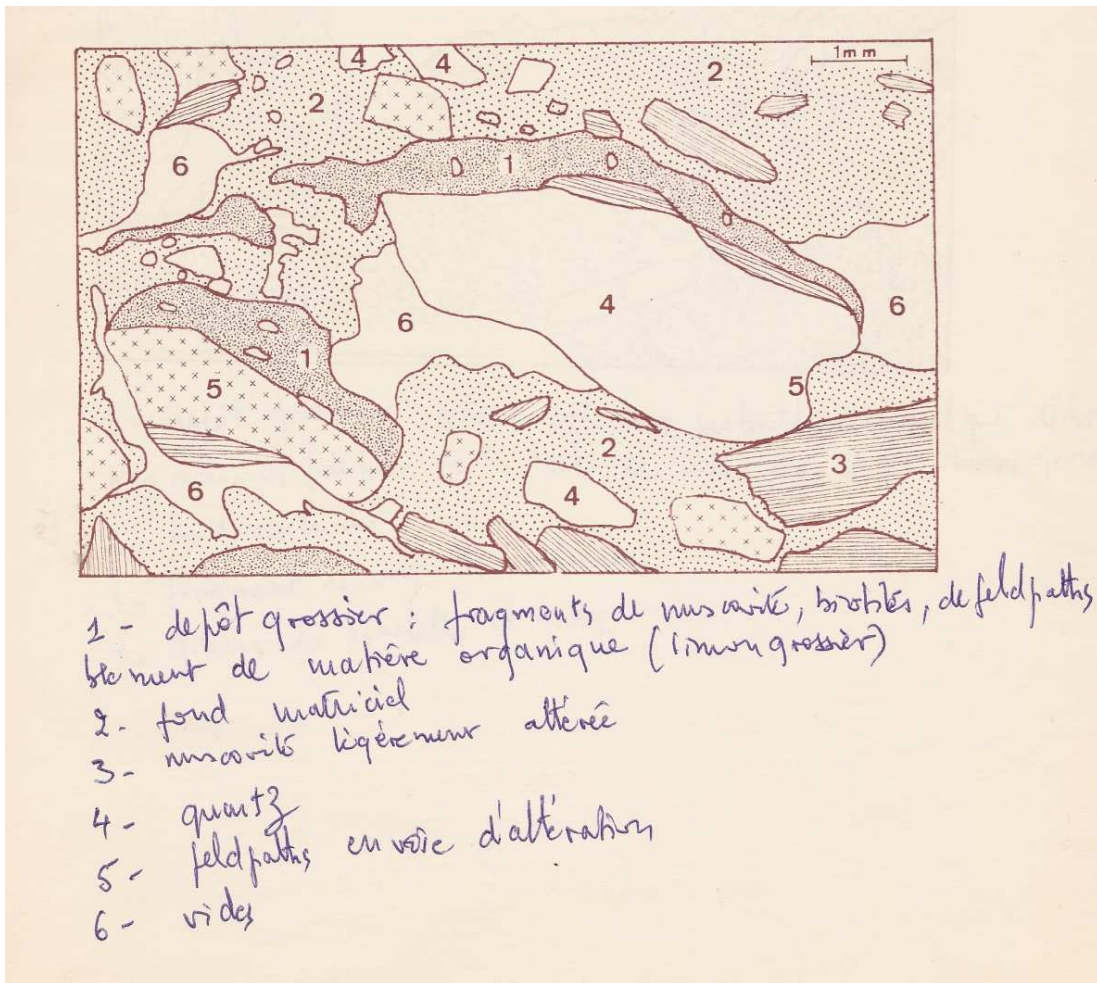
The highest sign of recognition for a micromorphologist – the Kubiena Award – absolutely corresponded to the very broad field of Nicolas's activities. He was a real follower of Kubiena as he studied many soils, with insight into the mechanisms of their formation gained using a reliable tool – his perfect knowledge of micromorphology. Among his favorite soils, the red Mediterranean should be mentioned, as well as ferricretes and a number of paleosols.

Like many outstanding micromorphologists, he made a contribution to both the conceptual sphere of this science, and to its methods or tools. The former includes his participation in the “Handbook for Thin Section Description” among five authors – world-known micromorphologists, and among his special tools was the approach to clay illuviation and fate of its products in the solum.

In order to illustrate the broad spectrum of Fedoroff’s activities, we considered a list of his publications kindly provided by Marie-Agnes Court. It contained 60 items (probably regarded by Marie-Agnes as most important) that we qualified in accordance with their subjects, although some publications concerned more than one subject; following Georges Stoops, we may speak about an essay in bibliometric analysis. This list should be regarded as a sampling and, of course, it is not complete and our approach is rather conventional. Nevertheless, the results of this assessment seem to be in good agreement with the scientific image of Nicolas as we knew him, discussed micromorphology with him and listened to his speeches at micromorphological forums.

The distribution of publications among subjects is as follows: pedogenetic processes (or soil genesis as perceived via micromorphology) – 29, with 11 about lessivage and 5 about weathering; 19 references concerned paleosols including 7 paleopedological studies of loess; 4 were dedicated to the archeological micromorphology. Only 4 references in the list were beyond micromorphology, they concerned some broad problems, for example, anthropogenic effects upon Mediterranean soils and the behaviour of soil systems in extreme environments; there are references advertising micromorphology and presenting methodological issues. In this assessment, a geographical aspect is also interesting: arid and extremely arid environments were covered in 16 references, 6 papers concerned Mediterranean soils and 6 were on soils of (semi)humid temperate climate.

Micromorphological evidences of clay translocation (lessivage) were represented very comprehensively in many of Nicolas’s early publications. He clearly formulated the prerequisites for clay migration in soil profiles (textural discontinuities, permeability, climate and moisture regimes), the particularities of the migration process including interaction with other pedogenic phenomena such as weathering, pedoturbation (his “*autobrassage*”) and the properties of accumulating horizons. He showed, for example, that iron-enriched clays are short-distance migrants unlike the iron-depleted ones, and that clay mineralogy may change during translocation. Nicolas proposed a classification of migrating particles in the 1970-ies, and not once returned to this issue in his studies of both recent and buried soils. As a sign of our deep respect for Nicolas’s research on “*particules minerales ayant migré en suspension*”, a picture from his paper of the same name published in the early 1970-ies is included here, together with his hand-written comments. This picture is one more example of Nicolas’ ‘know-how’ – interpretative schemes of an observation field or partial fabric (according to the Internet list of terms, 2010), and is a useful method of presenting one’s interpretation and teaching.



Addressing the micromorphological studies of lessivage performed by Fedoroff is curious for Russian pedologists, since at that time a heated discussion had developed among eminent scientists in the *Pochvovedenie* journal, known as “*lessivage – podzolization – gley*”. Unfortunately, the Soviet iron curtain allowed for very few opportunities to exchange ideas among specialists, and much of the knowledge gained by Nicolas might have contributed to the reaching of a reasonable agreement.

Being a specialist in the field of a rather narrow part of soil science did not prevent Nicolas Fedoroff from addressing broad conceptual problems, such as soil degradation and desertification, or from examining some abrupt extraordinary natural events. He also wrote papers about soils aimed at a wide range of readers. This feature may be due to his Russian provenance, since pedologists in Russia are renowned worldwide for their propensity to broad conceptual statements and to have a strong genetic bias. For pedologists in Russia, Nicolas Fedoroff is close in spirit in his interpretation of micromorphological data for perceiving soil genesis and soil evolution. For the world community of micromorphologists, Nicolas Fedoroff will remain in memory as a brilliant professional micromorphologist who created a strong genetic and paleopedological trend in this science.

Maria Gerasimova

## KUBIĒNA MEDAL - 2014



It is my greatest pleasure to announce you that 2014 Kubiēna Medal has been awarded to **Rienk Miedema** by the selection committee of Commission 1.1., formed by Brenda Buck, Herman Mūcher, Rosa M Poch, Georges Stoops and Larry Wilding, for his outstanding and sustained performance in the discipline of soil micromorphology.

The Kubiēna Medal will be handled to the awardee during the Meeting of the International Union of Soil Sciences that will be held in Jeju – Korea, in 2014.

I'm sending my warmest congratulations to Rienk, and hope to honour him in person next year.

Rosa M Poch  
Secretary of the Committee

## COURSES

**REPORT ON: Course on Soil Mineralogy and Micromorphology.**  
**Post Graduate School "Alberto Soriano", Faculty of Agronomy, University of Buenos Aires**  
**(Argentina). 17th – 28th September 2012.**

The 14th edition of the course on Soil Mineralogy and Micromorphology, given every two years since 1985 by Prof. Dr. Héctor Morrás at the Postgraduate School of the Faculty of Agronomy of the University of Buenos Aires in cooperation with the National Institute of Agricultural Technology (INTA), took place last September.

This course is taken freely by students enrolled in the Master's degree and PhD programs of the Faculty of Agronomy of the University of Buenos Aires, as well as by researchers and postgraduate students of other universities of the country. Twelve students with different professional training participated on this occasion- nine of them were agronomists, two were geologists and one was a biologist.



*Group of participants at the Postgraduate School-Faculty of Agronomy-UBA*

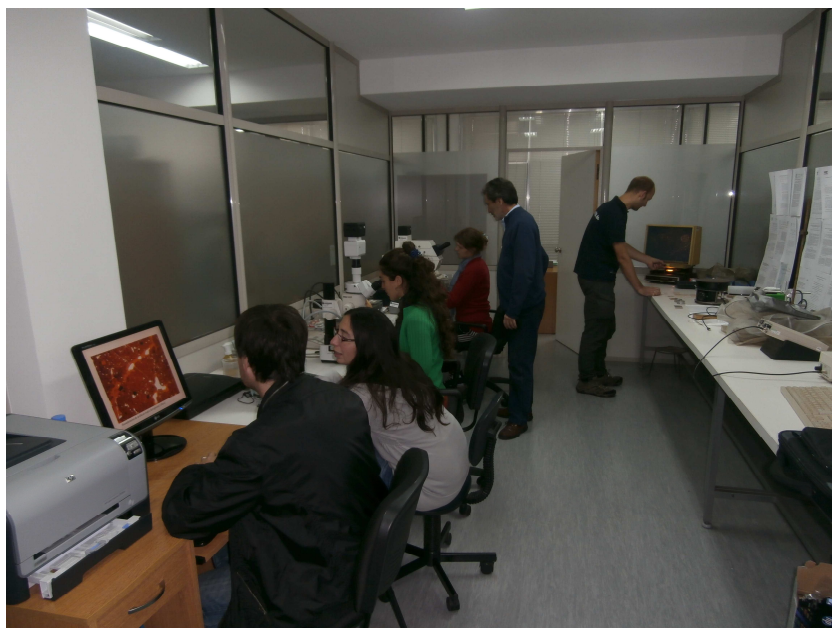
The lectures of the first eight days took place at the Postgraduate School of the Faculty of Agronomy, whereas the practical classes of the last two days took place in the Soils Institute of INTA located in Castelar (Buenos Aires metropolitan area). Dr. Lucas Moretti, Dr. Eduardo Favret and Emiliano Bressan -researchers from INTA- and Mario Castiglioni -Professor of the Faculty of Agronomy- collaborated during the development of the course by lecturing on various applications



of mineralogical and micromorphological techniques to the study of soils. Mr. Javier Delgado from INTA also collaborated by explaining the procedure to prepare thin soil sections.

The course provides the basis for a more detailed knowledge of the inorganic fractions and the processes of formation and organization of the soils. The first part was an introduction to rocks, minerals and factors of soil formation, and in particular concepts of weathering and pedogenetic processes. The course then focused on the mineralogy of clays and iron minerals from concepts of crystallochemistry, properties, genesis and evolution in relation to environmental conditions, role in the physical and chemical behavior of soils and various analysis techniques.

The second part of the course was devoted to the micromorphology of soils, including



concepts, terminology and various chapters of the descriptive system, and the theoretical principles both of optical and electronic microscopy. The course also included applications and examples of use of qualitative and quantitative micromorphological procedures for the study of the genesis of soils and paleosols, as well as for the study of the structure and porosity and its application to problems of biology, physics and soil management.

#### *Recognition of micromorphological features at the Soils Institute-INTA*

During the practical part of the course developed at the Soils Institute of INTA, participants had an introduction to the procedures of mineralogical analysis using X-ray diffractometry, procedures of electron microscopy, and the analysis of the magnetic susceptibility of soils. Students also visited the laboratory of preparation of thin soil sections and devoted some time to micromorphological analysis including recognition of some distinctive pedological features and a description of thin sections.

Like on other occasions, the course was intense and there was an interested and enthusiastic participation of students. Although the variety of issues addressed in this two-week course prevents studying the contents in more depth, the participants can acquire a brief knowledge of the concepts, methodologies and applications of Soil Mineralogy and Micromorphology, which awakens their interest and offers them tools to be used in their own research projects.

Prof. Dr. Héctor J. M. Morrás  
INTA-CIRN, Instituto de Suelos  
Castelar, Argentina

# 1<sup>st</sup> School of Heavy Mineral

welcome   **HM school**   News   Research   Team   Friends



7th-10th May 2013  
University Milano-Bicocca, Italy  
1st School of Heavy Mineral Analysis



**Venue**  
DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES  
*Piazza della Scienza 4, University of Milano-Bicocca, Italy*

The purpose of this school is to introduce young people worldwide interested in heavy mineral identification and provenance studies of sediments and sedimentary rocks carried out with classical optical methods.

Students will be showed how long standing problems concerning the appropriate identification of detrital minerals can be solved.

After detailed analysis of most groups of heavy minerals, we will illustrate a wide range of examples from real case histories from different geological settings in different areas of the world. The course aims at improving student's capability to extract information from detrital sediments and to collect accurate quantitative mineralogical data.

We will also explain how to tackle problems related to hydraulic sorting, chemical weathering in hot humid climate, and diagenesis.

Finally, we will illustrate how Raman spectroscopy allows us to correctly identify any mineral in grain mounts or in thin sections.

By using this innovative technique we can also assess chemical variability within each heavy-mineral group and compare their diagnostic chemical signatures with different source rocks.

Conveners:

**Sergio Andò** and **Eduardo Garzanti**, Department of Earth and Environmental Sciences, University of Milano-Bicocca, Italy.

**Luca Caracciolo**, Department of Earth Sciences, University of Calabria, Italy.

Contact information: [sergio.ando@unimib.it](mailto:sergio.ando@unimib.it); [luca.caracciolo@unicl.it](mailto:luca.caracciolo@unicl.it)

[http://www.ighg.it/SedPetr/SEDPETR/HM\\_school.html](http://www.ighg.it/SedPetr/SEDPETR/HM_school.html)

UNIVERSITÀ DELLA CALABRIA



**DiBEST**  
Dipartimento di Biologia, Ecologia e Scienze della Terra




Under the patronage of:



ASSOCIAZIONE ITALIANA DI ARCHEOMETRIA

**1st International School on the Characterization of Archaeological and Historical Mortars and Plasters. Archaeology, Archaeometry and Conservation.**

The DiBEST (Dipartimento di Biologia, Ecologia e Scienze della Terra) of the Calabria University (Arcavacata di Rende - Italy), under the patronage of AIAR (Associazione Italiana di Archeometria), organizes the "1st International School on the Characterization of Archaeological and Historical Mortars and Plasters. Archaeology, Archaeometry and Conservation" (1st-ISCARM).

The 1st ISCARM school will take place at the University of Calabria, at Arcavacata di Rende in Calabria (CS-Italy) from 3 to 7 June 2013.

The aim of the school is to propose an interdisciplinary approach to the study of archaeological and historical mortars and plasters. The most advanced methods used in the study of this important material will be presented during lectures and laboratory practices. These will involve the characterization of mortars, study of the provenance of raw materials and technology, dating and conservation problems. The relation with the archaeology of architecture and the study of the function of buildings (residue analysis) will also be analysed during the school.

Participants will have the opportunity to know all the possibilities that the study of plasters and mortars provides, and to go deeper in the subjects they are more interested in.

For further information link to the following web page: <http://www.smfn.unical.it/iscarm/>

or contact: [summerschooliscarm@gmail.com](mailto:summerschooliscarm@gmail.com)



**II LATIN-AMERICAN TRAINING COURSE ON SOIL MICROMORPHOLOGY AND COMPLEMENTARY TECHNIQUES  
04 TO 10 AUGUST 2014, BOGOTÁ / COLOMBIA.**

The Second "Latin-American Training Course on Micromorphology", is intended for people belonging to the areas of agronomy, geography, geology, archeology, biology and many other fields of environmental sciences. This course, taught in Spanish, deals with different micromorphology techniques, electronic microscopy, clay mineralogy and characterization of the coarse fraction. This course focuses on basic micromorphology research and also on solving environmental problems through the application of micromorphology and complementary techniques in tropical and subtropical environments.

**VENUE:** Edificio de Posgrados Facultad de Ciencias Humanas, Universidad Nacional de Colombia - Carrera 30 N°45-03, Bogotá D.C., COLOMBIA. Tel: (57) – (1) 3 16 50 25

**TOPICS:** Sampling procedure and thin sections preparation. Using the petrographic microscope, mineral identification, soil fabric, mineral and organic constituents, groundmass, description schemes, basic rules of interpretation. Soils with emphasis on weathering and pedogenic processes of soils in humid environments, together with some examples for temperate and dry zones. Micromorphological applications on geoarchaeology, taphonomy, paleoenvironments and image processing. Introduction to electron microscopy and clay mineralogy.

**CONTACT:** [waposadare@unal.edu.co](mailto:waposadare@unal.edu.co), [jcloaiza@unal.edu.co](mailto:jcloaiza@unal.edu.co)

<http://www.medellin.unal.edu.co/latmicrosoil/>

**REGISTRATION:**

Beginning registration: January 01, 2013

Inscriptions until: May 15, 2014



## MEETINGS



**May 9-11, 2013:  
International  
Soil Micromorphology  
Workshop in Cambridge**

This is to announce that the 25th anniversary workshop meeting of the International Soil Micromorphology Working Group will be held in the McBurney Laboratory in the Division of Archaeology at Cambridge from May 9th to 11th, 2013. We will have to put a ceiling on participants of about 30 people.

The format of the workshop will be as follows: a field-trip on May 9th, with the following two days for the microscope workshop with short presentations (up to twelve 20-minutes long) in the mornings of May 10th and 11th (9-11AM) and microscope work for the rest of the day, and a keynote paper at the end of the day on May 10th. The keynote talk will be by Prof Tristram Kidder of the Department of Anthropology, Washington University in St Louis, Missouri, a geoarchaeologist who is working on the early Holocene sequences in the Yellow River basin and the history of Han China.

There will be ten travel/accommodation bursaries to help fund graduate/post-graduate participants who wish to present a short paper at the workshop. Please apply via email to Charly French ([caif2@cam.ac.uk](mailto:caif2@cam.ac.uk)) by February 4th, 2013, with a letter of intent giving your paper topic and estimated travel/accommodation costs.

Unfortunately Cambridge is not the cheapest place to find accommodation, and there will be no college accommodation available at that time, so it will mean searching various web-sites, such as:

[www.hostelbookers.com](http://www.hostelbookers.com)

<http://wpv20.user.srcf.net/accommodation.htm>

My lab members and I very much look forward to seeing you next May.

Yours -

*Charly*

Prof. Charles A. I. French, MifA, Department of Archaeology and Anthropology,

Downing Street, Cambridge

CB2 3DZ, UK; (44) (0)-1223-333533; [caif2@cam.ac.uk](mailto:caif2@cam.ac.uk)



# JIA 2013

BCN  
M A Y  
07/11

VI Young Researchers in Archaeology Conference

*“Change in crisis situations. Past experiences and new perspectives from archaeology”*

## **Archaeological Soil Micromorphology Workshop**

**7th May Barcelona, Spain**

It is our pleasure to announce that the VI JIA 2013 Conference is organised by AINUBHA (Associació d'Investigadors/es UB Història i Arqueologia). The event will be held in Barcelona (Catalonia, Spain) from the 7<sup>th</sup> to 11<sup>th</sup> of May 2013 at the Facultat de Geografia i Història, Universitat de Barcelona (UB) and the Institució Milà i Fontanals, Spanish National Research Council (CSIC). This conference is aimed to researchers who are not in possession of a PhD degree (including MA/Msc and undergraduate students). For the first time in the JIA, this year there will be some workshops of great interest for young archaeologists, in order to provide a space for training and discussion as a complementary action to the conference. They will be taking place on May 7<sup>th</sup>, the day before the sessions.

The **Archaeological Soil Micromorphology Workshop** aims at presenting current lines of research within this discipline and becoming a meeting forum among young researchers in formation. Moreover, we propose to bring knowledge about this analysis technique to the archaeology students, as well as trying to point out, as far as possible, guidelines and strategies that will help young researchers to confront the complex world of the soil micromorphology.

### **To participate:**

The number of participants is limited to 20-30 people max. It is possible to do a short powerpoint presentation of your work (up to 10 min. long). We strongly encourage micromorphology researchers to bring their own material to the workshop, so it will be as enriching to us all as possible. Otherwise, we will provide slides to work with.

Registration to VI JIA Conference 7th 11<sup>th</sup> May (includes Workshop):

<http://jia2013.arqueotype.com/en/inscripciones.html>

Registration to the Archaeological Soil Micromorphology Workshop:

Please contact the organisers via email as soon as possible!

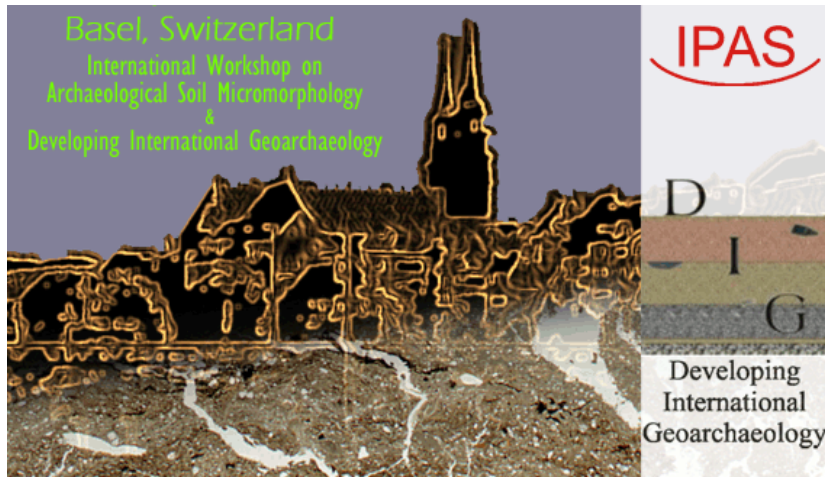
### **Organisers:**

Marta Mateu. SERP and GRAP. Prehistory, Ancient History and Archaeology Department. University of Barcelona, 08001, Barcelona, Spain. **Contact: martamateu@ub.edu**

Natalia Éguez. SERP. Prehistory, Ancient History and Archaeology Department. University of Barcelona, 08001, Barcelona, Spain. **Contact: nataliaeguezg@gmail.com**

**Date:** Tuesday 7th May, 11-14:30h.

**Place:** Room 12. C/ Martí i Franquès, 08028, Barcelona, Spain. Faculty of Geology, Universitat de Barcelona.



## Developing International Geoarchaeology conference 2013 and International Workshop on Archaeological Soil Micromorphology Basel, Switzerland, 2<sup>nd</sup> to 6<sup>th</sup> September 2013

The next *Developing International Geoarchaeology (DIG)* conference will be held at the University of Basel, Switzerland, on September 5<sup>th</sup> and 6<sup>th</sup> 2013, directly following the annual *Workshop of the Working Group on Archaeological Soil Micromorphology* from September 2<sup>nd</sup> to 4<sup>th</sup> 2013.

The **workshop** will follow the tradition of workshops of the International Archaeological Soil Micromorphology Working Group: participants are invited to bring thin sections relating to current research which will be used as starting points for discussion, for informal exchange of ideas and collaborative problem solving during two days of microscope sessions. For this purpose two rooms with c. 25 (total) polarizing microscopes will be available. The workshop is a practical orientated session, with the possibility to display posters.

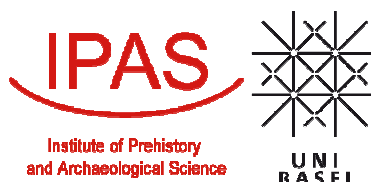
After the workshop there will be an **excursion** focused on sedimentary and archaeological sequences in outcrops and excavations in the Basel region. All profiles are well documented, some also by micromorphology.

The **DIG conference** will be held over the days following the workshop, consisting of two days of oral presentations and a poster session. The goal of DIG is to bring together a wide variety of international researchers, practitioners, and students in this diverse and interdisciplinary field in order to facilitate discussion, stimulate research, and promote international scholarship in geoarchaeology. The main themes of this year's meeting are: *Advances in Methodology and Current Research; Taphonomy and Preservation; Geoarchaeology of Wetlands.*

We are now inviting submission of abstracts for individual papers and posters to be presented during the DIG conference. **Important deadlines: Abstract submission - April 30<sup>th</sup> 2013; Registration - June 30<sup>th</sup> 2013.** For further information regarding the venue please consult our homepage: <http://geoarch.ipna.unibas.ch/WASM&DIG/home.html>

The organizing committee

(Philippe Rentzel, David Brönnimann, Kristin Ismail-Meyer, Christine Pümpin, Philipp Wiemann)



<b>Willkommen/Welcome</b>		<b>Soils in Space and Time</b>	
		<b>Ulm - Germany</b>	
		Date: September 30 <sup>th</sup> - October 5 <sup>th</sup> 2013	
		Venue: Ulm University	
		<b>Local organizing committee:</b>	
<b>Divisional Conference of all Commissions and Working Groups of Division I.</b>		Karl Stahr, Hohenheim	Thilo Streck, Hohenheim
		Marian Kazda, Ulm	Ellen Kandeler, Hohenheim
		Reinhold Jahn, Halle	Peter Schad, München
		Daniela Sauer, Dresden	Holger Fischer, Hohenheim
		Thomas Scholten, Tübingen	Ludger Herrmann, Hohenheim
		Martin Werth, Ulm	

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

**"Soils in Space and Time"** is one of the key issues documenting the variability of the pedosphere.

Within the disciplines soil morphology, micromorphology, soil genesis, soil geography, soil classification, paleopedology and pedometrics a number of interesting symposia:

**Pedogenesis and carbon sequestration,**

**Quantitative modelling of soil processes and formation,**

**Soil morphological indicators of past environments,**

**Stabilization of soil OM by inorganic soil constituents**

**Changes of Wetland Soils with Time (Natural and Anthropogenic)**

Furthermore the Workshop "Soils and Dust in the Mediterranean" (AEOMED: <https://ppsg2011.uni-hohenheim.de/84832> ) will take place in the frame of the conference.

Beside interesting oral and poster presentations a number of newly planned and organized field trips will be offered.

The conference is the first divisional meeting of all commissions and working groups of Division I Soils in Space and Time of the International Union of Soil Science (IUSS). For further Information, please visit our homepage (<https://iuss-division1.uni-hohenheim.de/>)

or write an email to <[info-division1@uni-hohenheim.de](mailto:info-division1@uni-hohenheim.de)>.

**!!**

**The deadline for the submission of abstracts is finally extended until 28.04.2013.**



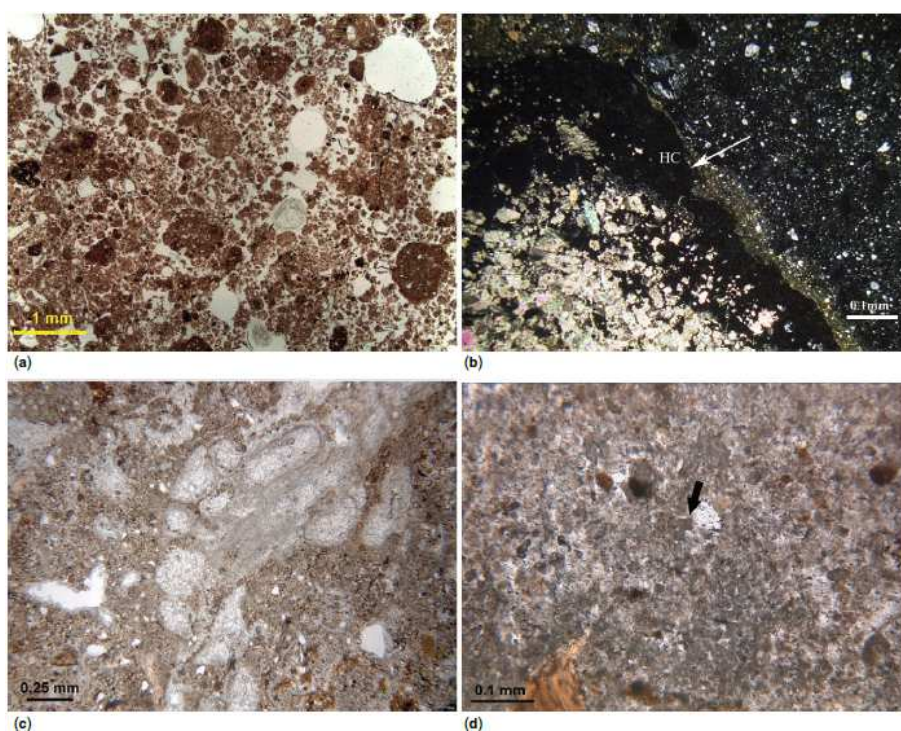
## PUBLICATIONS AND RESEARCH NOTES

Karkanis P., and Goldberg P. (2013) **Micromorphology of Cave Sediments**. In: John F. Shroder (ed.) *Treatise on Geomorphology, Volume 6*, pp. 286-297. San Diego: Academic Press.

Cave sediments are commonly fine grained and lack macroscopic sedimentary structures. Only a detailed analysis of the micromorphological characteristics permits an accurate determination of the sedimentary dynamics of such cave deposits.

Microscopic sorting, grading, clast orientation, lamination, intercalation, deformation structures, and porosity are some of the features used to identify microfacies such as lacustrine, slackwater, debris flow, slumping, sheetwash, hyperconcentrated flows, and solifluction. In combination with micromorphological data derived from post-depositional diagenetic trends and anthropogenic evidence, it is possible to reconstruct the evolution of a cave, and the climatic history and landscape evolution of the area.

The Index of this interesting and useful review contains: The Micromorphological Method / Processes Identified by Micromorphological Analysis / Depositional Processes / Post-Depositional Processes / Anthropogenic Processes / Micromorphology of Cave Sediments and Environmental Change.

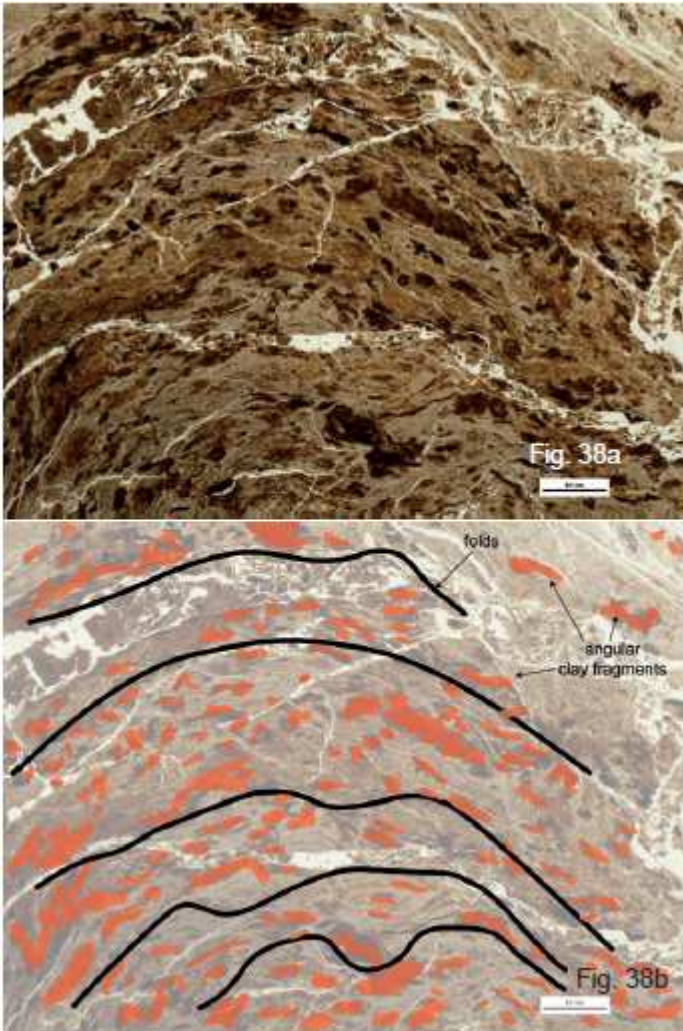


a) Bioturbation filling with loosely packed aggregates of different sizes and roundness; (b) Microphotograph of black isotropic apatite (HC) replacing limestone (XPL); Theopetra Cave, Greece; (c) Microphotograph of calcified root with alveolar septal structure, indicative of formation in the illuminated part of the cave (Qesem Cave, Israel; Karkanis et al., 2007); PPL; and (d) Microphotograph of calcitic wood ash crystals (example with arrow) with pseudomorphic cellular forms after plant tissue; Klisoura Cave 1, Greece; PPL.

### Other papers by Paul:

Xiaohong Wu, Chi Zhang, Paul Goldberg, David Cohen, Yan Pan, Trina Arpin, Ofer Bar-Yosef, 2012. Early Pottery at 20,000 years ago in Xianrendong Cave, China. *Science*, 336, 1696-1700.

Chazan, M., Avery, D.M., Bamford, M.K., Berna, F., Brink, J., Holt, S., Fernandez-Jalvo, Y., Goldberg, P., Matmon, A., Porat, N., Ron, H., Rossouw, L., Scott, L. and Horwitz, L.K., 2012. The Oldowan horizon in Wonderwerk Cave (South Africa): Archaeological, geological, paleontological and paleoclimatic evidence. *Journal of Human Evolution*, 63: 859-866.



**Fig. 38:** HG56.15.30cp shows distinctive low amplitude folding can be seen with discrete angular clay fragments occurring through-out the sediment. The clays in many places appeared to be attenuated, yet have remained angular, which would suggest they were frozen during deformation.]

Micromorphological analyses of a series of samples of the top 56 metres, constituting the Mannheim Formation, in the Heidelberg UniNord core extracted from Rhine Valley near Heidelberg in the Upper Rhine Basin were examined and compared to previous macrosedimentological data. The sediment sequences in this part of the Rhine Basin reflect the geomorphic, biotic and climatic activities as translated into the sedimentary sequences found at Heidelberg. Based on micromorphology, the sediments attest to forming within a fluvial environment at times within the river channel and/or in point bar avulsion sites where localized debris flows had occurred, and at other times within a broad floodplain some distance from the main river channel and, finally, within abandoned meanders. The sediments reveal evidence of localized flooding events, of debris flows both with organics incorporated and at times and places with no organics, of localized poundings and short term lacustrine environments whilst in other places alluvial sedimentation dominates. Likewise the sediments act as proxy evidence of dramatic changes in climate over the period of

deposition illustrative of cool periglacial tundra-like conditions and of milder forested temperate environments. A strong link can be observed between macro- and microstratigraphic evidence, the latter revealing even more detailed and valuable sources of information.

The aim of the investigation was to define the extend of pedogenetic processes by analysis of colour changes in groundmass of each genetic horizon. The object of the research were Chromic soils developed from red deposits of Lower Triassic (Buntsandstein) in the Holy Cross Mountains. Micromorphological studies were made with polarization microscopes Olympus BX- 41 and Olympus SZX-10. Image analysis was conducted with software program AxioVision 4.5 with Auto Measure module. The application of advanced methods of digital data analysis allowed for the quantitative compilation of measurement figures in thin sections. On the basis of micromorphometrical data designated objective numerical indicators, which allowed comparison groundmass color between each genetic horizon. Statistical analysis by ANOVA test confirm that groundmass color measured in RGB scale in investigated horizons are almost the same. Obtained results evidence that characteristic red color of soil substrate in analyzed soils developed from Lower Triassic rocks originated from the bedrock color. This fact indicates low extent of the pedogenic processes.

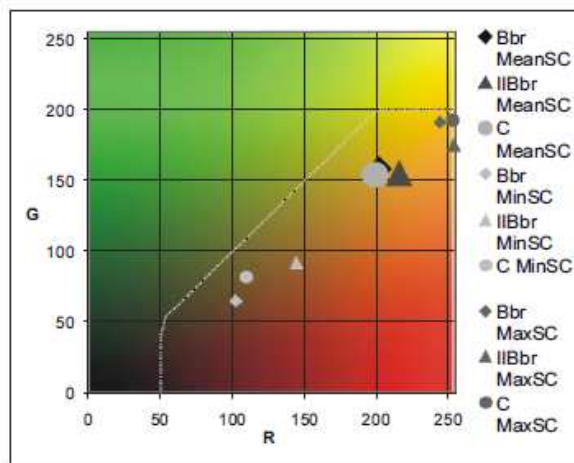


FIGURE 6. Distribution of averaged spectres in RG system for color of horizons Bbr, IIBbr, C

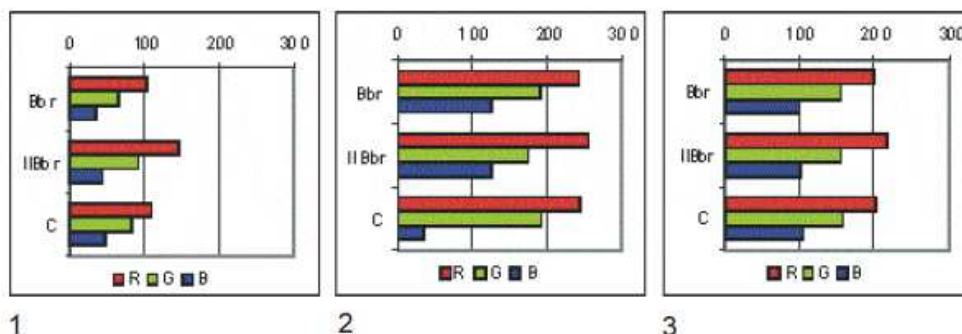


FIGURE 7. Histograms of averaged range of colors in RGB system for horizons Bbr, IIBbr, C: 1 – *Minimal Saturation Colour* – MinSC; 2 – *Maximal Saturation Colour* – MaxSC; 3 – *Mean Saturation Colour* – MeanSC.

## NEWS FROM THE Archaeological Soil Micromorphology Working Group

### Proceedings of 14<sup>th</sup> IWMSM, Session 5 (*Site formation processes in archaeology and cultural landscapes, archaeometry and geoarchaeology*)

It is expected the *Quaternary International* Volume will publish up to 15 articles; two papers already accepted, two papers under revision, others still under review.

### May 9-11, 2013: International Soil Micromorphology Workshop in Cambridge

Contact: Prof. Charles A. I. French ([caif2@cam.ac.uk](mailto:caif2@cam.ac.uk))

### Developing International Geoarchaeology conference 2013 and International Workshop on Archaeological Soil Micromorphology: Basel, Switzerland, 2nd to 6th September 2013 (<http://geoarch.ipna.unibas.ch/WASM&DIG/home.html>)

Contact and registration: [geoarchaeology@unibas.ch](mailto:geoarchaeology@unibas.ch)

### TRAINING in Archaeological Soil Micromorphology – Institute of Archaeology, University College London

This annual 2 week course continues to run – next training – November 2013

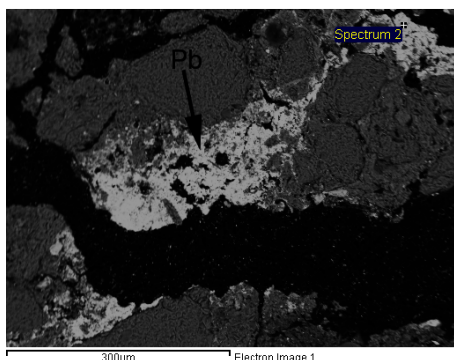
Training week – 4-8 Nov

Practice/follow-up week 11-15 Nov

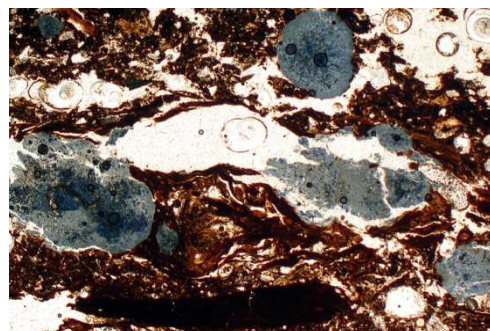
Week 1: Intensive course on the application of soil micromorphology to archaeology, ranging from buried soils, hunters and gatherer sites, clearance, cultivation, animal management, activity surfaces, settlement morphology (prehistoric – Roman – medieval), dark earth and industrial traces. Full programme available.

Contact: Dr Richard I Macphail ([r.macphail@ucl.ac.uk](mailto:r.macphail@ucl.ac.uk))

### Proposed workshop in China - will probably take place in 2015



Late Roman (4<sup>th</sup> century) coastal structure; earth floor stained with lead (Pb) indicating use of lead vessels during salt-making. Stanford Wharf, River Thames Estuary, Essex, UK  
*Quaternary International* under review



Viking period (~900 AD) Gokstad Ship burial mound, Vestfold, Norway; turf mound - laminated Mull litter layers with secondary vivianite (crystalline iron phosphate) – anaerobic conditions allowed wooden long ship to be preserved. Plane polarised light, frame width is ~4.62mm.  
*Quaternary International* under review

## MISCELLANEOUS

Irina Kovda and Curtis Monger (guest editors) are informing us about the state-of-the-art of the publication of the proceedings of the 14th IWMSM – Lleida 2012 as special issues of the Spanish Journal of Soil Science:

More than 20 papers have been invited after the consultations with the conveners of the sessions No 1 to 4.

- 3 expected papers have not been submitted;
- 3 papers passed the review process;
- 5 papers are under minor revision after the reviews;
- 2 papers are under major revision after the reviews;
- 6 papers are still under revision;
- 1 paper was rejected;
- 1 paper was shifted to the regular SJSS issue.

After all papers pass the review process, we expect to have the final selection to publish in the special issue of SJSS the best micromorphological papers. It means that some papers passed the review process could be rejected in case they do not show enough micromorphology.

The information about the special issue of Quaternary International with selected papers of Session 5 (Ed. Richard MacPhail) is included in the News of the Archeological Soil Micromorphology Working Group (previous page).



Przemyslaw Mroczek and Maria Casamitjana are re-formatting the abstracts of the 14th IWMSM – Lleida 2012 as individual url, so that they can be published in the web page of the meeting and indexed in Google Scholar.

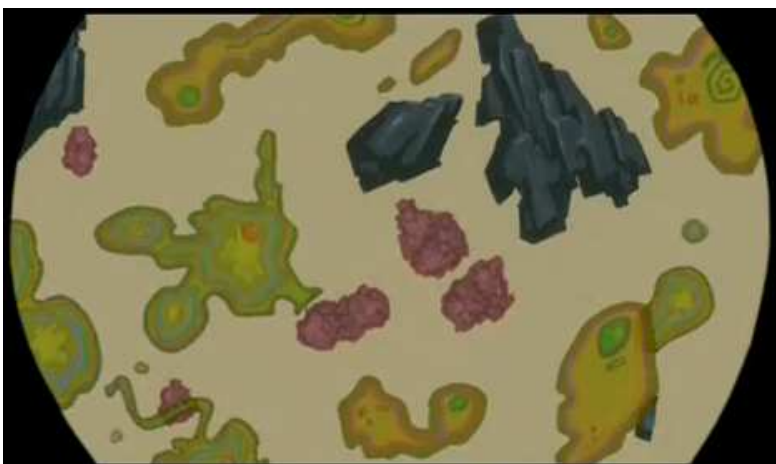


Stirling Analysis for Geoarchaeology (StAG) (<http://www.stag.stir.ac.uk>) provides a range of professional services and analysis for Geoarchaeologists. StAG was formed out of the well established [Micromorphology Labs](#) at the University of Stirling and the production of large format [soil thin section slides](#) remains one of our main services.

Sent by: George MacLeod

## THE LAST PAGE

### M I C R O M O R P H O L O G Y I N A D I S N E Y M O V I E !!



English version:

<http://www.youtube.com/watch?v=-T2luwLcfeg>

Spanish version:

<http://www.youtube.com/watch?v=sUMhgUL9qtQ>

(sorry, I couldn't find any more translation...)

Sent by Dan Fallu, a Paul Goldberg's student (BU)