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SOIL MORPHOLOGY & MICROMORPHOLOGY

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<http://loess.umcs.lublin.pl/micro.htm>

LETTER FROM THE CHAIR

Dear Colleagues,

It is my pleasure to present you the April 2018 Micromorphology Newsletter. It contains information about future courses and recent publications, as well as about the micromorphology sessions of the 21st IUSS Meeting in Rio de Janeiro next August. Please proceed to the registration to the conference and attend our exciting oral and poster sessions. We also expect all of you during the Business Meeting of Commission 1.1. and the presentation of the Kubiëna Medal to Maria Gerasimova. I am also pleased to inform you that the Young Micromorphology Publication Award 2018 has been awarded to a paper authored by Diogo Spinola. Congratulations Diogo !

When preparing this Newsletter, I never thought I would have to cope with the task of honouring two great micromorphologists who passed away within such a short time. I want to thank Georges Stoops and Fabio Terribile who accepted to write their obituaries for this newsletter. While as scientists, we are often *Standing on the Shoulder of Giants*, both Herman Mùcher and Ewart A. FitzPatrick (Kubiëna Medals 2006 and 2001), were indeed two of those giants of soil micromorphology. Their invaluable teaching and deep humanity will remain forever.

I am also taking this opportunity to welcome and wish the best to the new Commission Chair, Fabio Terribile; and to say goodbye as Commission Chair, -it means that this is my last Newsletter. I first served as Vice Chair (2006-2010) before being Chair (2010-2018), so, it is time that another person takes the lead. I want to thank all people that during this period helped with enthusiasm to promote soil micromorphology, as Brenda Buck (past Chair), Martine Gerard (past ViceChair), Richard Heck (ViceChair), Przemyslaw Mroczek (web page); besides all the people involved in the organisation of the Commission Meetings in Chengdu, Lleida and Mexico, members of the Commission Awards, and many more people who have always been willing to contribute to the newsletters and to many other tasks. I will continue participating in the Commission, since I am committed to continue serving soil micromorphology and making people discover the fantastic universe hidden in the small things.

With my best wishes to all of you,

Rosa M Poch
Chair, IUSS Commission Soil Morphology and Micromorphology

Lleida, April 2018

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In Memoriam Herman Mücher



Image: Sander Mucher

Dr. Herman Mücher passed away on December 30th, in Valkenburg (The Netherlands).

Herman Mücher was born on March 13th, 1935 in Heerlen (Province of Limburg, The Netherlands). After his secondary school he followed a practical training at the Geological Bureau of the Mine Region, prior to his military service. From 1957 till 1967 he studied Physical Geography and Soil Science at the University of Amsterdam, where he also got his PhD degree in 1986. From 1964 till his retirement in 1997, he was respectively research assistant and senior lecturer at the same university, where he was in charge of lectures and practical exercises in soil micromorphology and the soils of the Netherlands, and also with field

training of students, in the Netherlands and in Galicia (Spain). In 1967 he was in charge of the organisation of a laboratory of micromorphology at the university, after a training with A. Jongerius (Wageningen), H.J. Altemüller (Braunschweig) and in the laboratory of W.L. Kubiëna in Reinbek.

Herman Mücher was also active in overseas regions. In 1976 he was setting up a micromorphological laboratory at the Gadjah Mada University in Yogyakarta (Indonesia), and in 1982 at the National Bureau of Soil Survey and Land Use Planning in Nagpur (India). Apart from these activities he was involved in several international projects. In 1986 he investigated during six months at the CSIRO in Australia the production of organic matter and crust formation in rangeland soils, and in 1990 the pedogenesis of a catena in semi-arid tropical Australia.

Herman Mücher was an expert in the field of the micromorphological study of slope deposits and slope stability, including field and laboratory experiments. Especially his experimental approach in collaboration with the former Prof. J. De Ploey (University of Leuven, Belgium) is considered as very innovative. He was also involved in the study of Quaternary palaeosoils, often in the frame of

archaeological research. He was involved as lecturer in four “International Intensive Training Courses on Soil Micromorphology” organised in the frame of ERASMUS in Wageningen (2x), Gent and Granada.

He was author of more than 60 papers mainly in international journals and books, and participated in many international congresses, often as invited speaker. He was one of the pioneers of micromorphology, and assisted to almost all International Working Meetings on Soil Micromorphology (except the Chengdu meeting in 2008). By his clear lectures and conferences, he inspired many students to use micromorphology as an important tool in their research. For his important contributions to micromorphology he was awarded in 2006 the Kubiëna Medal of the IUSS during the IUSS meeting in Philadelphia. After his retirement he cooperated for instance with the team of W. Roebroek of the Faculty of Archaeology of the University of Leiden, resulting in a paper in Nature.

Herman Mùcher was not only an excellent scientist, but moreover in the first place a warm and social person, supported by his wife Thea, who often accompanied him during his many travels and stays. He had a wide field of interest, including nature preservation and local history. He enjoyed life, a good meal and a good drink.

G. Stoops

In Memoriam Ewart Adsil FitzPatrick

We have lost Fitz. Ewart Adsil FitzPatrick - one of the world's top pedologists - passed away on January 18th 2018. We have lost a great scientist, a great personality and a good friend.



Image: Fabio Terribile

Fitz (as everybody knew him) was born in Barbados on 17th October 1926. As young fellow he was strongly interested on boat building, sailing and cricket ! Formal education started at

Harrison College; then in 1948, under the supervision of Prof. Frederick Hardy, he received a Diploma at the Imperial College of Tropical Agriculture (DICTA) in Trinidad (West Indies). His final year project focussed on Soil Classification and soil characterisation at the institute farm. He left the West Indies to join the newly formed Department of Soil Science at the University of Aberdeen (Scotland), as the first PhD student ! In 1951, he received the PhD under the supervision of Dr Williamson (Head of Department) with a thesis on the formation of soils around the upper Deeside. Then Fitz was assistant (1951-54), lecturer (1954-69) and senior lecturer (1969 until retirement) in soil science at the University of Aberdeen.

Fitz was one of the leading international experts in soil science. He was active for over 55 years both in teaching and research mainly in pedology, micromorphology and soil classification. He produced over 90 publications including seven books (some translated into Spanish and Chinese). His books - written very carefully in terms of content and beautiful illustrated - have forged many generations of soil scientists. In soil microscopy, he really produced two landmark books. "Micromorphology of Soils" (1984), and "Soil Microscopy and Soil Micromorphology" (1993) became standard textbooks for scientists and PhD students in the field. He also produced three interactive CDs: "Interactive Soils" (1999), "Horizon Identification" (2003) and "Soil Microscopy and Micromorphology" (2005).

The studies conducted by Fitz and his many collaborators were decisive in the development of soil micromorphology, soil classification, and glacial and periglacial soil features. These achievements were partly due to Fitz's huge experience of soil geography. He sampled and studied soils from more than 25 countries (including all of Europe, Russia, Australia, Argentina and the United States). Thanks to this

activity he built up a comprehensive collection of soil thin sections, now held by CRISP (University of Napoli). He was also leader of the very successful Aberdeen- Spitzbergen expedition in 1954 to investigate the relationship between permafrost and indurated layers in the soils of Scotland. After this experience, he published in the Journal of Soil Science (1956), the correlation between the indurated horizon and fossil permafrost, a property with important practical implications. In 1965, he published his single author Nature paper about relationships between soils and glacio-fluvial outwash; this also made some changes in fundamental thinking of the last Ice Age in the UK. He made important additional contributions on deep rock weathering, soil structural changes, enchytraeid worms in soils and calcrete development.

In micromorphology, he developed new methodologies such as sample preparation (e.g. acetone replacement), the production of thin sections (combining very large size with very high quality), applications of submicroscopic techniques, visualization of soil permeability (methylene blue), and application of remote sensing image processing techniques to quantify micromorphological soil features.

He brought about major changes in soil micromorphology, especially in descriptive systems, and nurtured his own vision of the way ahead for future challenges. In this respect, he deeply questioned the micromorphological “scientific Jargon” being used only by very specialised scientists. Instead, his approach was simple but powerful, favouring terminology that could be used by any soil scientist. Basically he was hoping to disseminate micromorphology in the rest of soil science; somehow this is happening now.

Indeed, he tried to change soil classification as well but here – despite his great efforts – possibly Fitz just managed to sow some good seeds. Hopefully these seeds will germinate in due course.

Fitz also worked to create bridges with all disciplines close to soil science including botany, geomorphology, glaciology and archaeology.

When he retired he did not think for a minute to stop, and immediately learned to use software to create educational multimedia CDs for students and scientists alike.

He taught soil science for over 50 years; his lectures were inspirational to many undergraduates and postgraduate students. In the same period he supervised – with much dedication and attention to detail - many students (about 28 MScs and 24 PhDs) from many different countries, and participated and co-organized numerous international courses on soil micromorphology (Argentina, the United Kingdom and Italy) and disseminated his knowledge through numerous seminars and conferences organized in over 19 countries. Fitz's impact on soil research and teaching was based on the magic combination between his scientific culture and his warm and enthusiastic personality.

For his achievements, he received several awards including the silver medal of the British Society of Soil Science (1989) with his student, the Kubiëna medal of IUSS (1996), fellow of the Royal Geographical Society (1999) and the Philippe Duchaufour Medal of the EGU (2006). I feel that perhaps one of his major recognitions was also the sincere admiration of colleagues and students listening to his explanations in front of the complex beauty of a soil profile.

He never really stopped working. At the age of over ninety - in the care home where he lived his last years – he was still producing an update of his .xls file with the very last version of his soil classification system.

Fitz will be sadly missed by his family, his wife Morag, children, Clare and Brian and his four Grandchildren.

Fitz leaves a great legacy of knowledge, scientific culture and investigation techniques. It is now up to us to put his teachings and visions to good use !

Fabio Terribile



Image: Fabio Terribile

Condolence notes for H Mücher and EA FitzPatrick

A remarkable contribution of Herman J. Mücher to micromorphology is the recognition of those soil features, particularly common in Quaternary paleosols and anthroposols, which are related to geomorphic and cryogenic disturbances. This approach is necessarily required, albeit yet insufficiently used, in studies of soils' evolution and history. Prof. Mücher's views strongly impacted his colleagues, myself including. The newcomers to our field will hopefully pay more attention to Mücher's scientific pluralism. In life Herman was a nice and attentive person. Let his soul rest in peace.

Alexander Tsatskin, PhD, retired from University of Haifa, Israel

I never worked with Herman directly and I knew him mostly from IWMSM meetings in the late 70s/early 80s. Having said that, I would humbly point out that for a newcomer at the time, he was a wonderfully open and welcoming person, and one who was as guiding light for a young micromorphologist. His work served as a major anchor and foundation for the research of many of us over the decades. It's sad to see him go as a person and a scholar.

Paul Goldberg – Professor Emeritus, Department of Archaeology – Boston University, USA

I met Dr. Fitzpatrick on a trip to Russia and we shared a cab ride for one hour. I learned as much in that one hour as I ever did in any single year of study.

John M. Galbraith –Virginia Tech University, USA

My condolences to Fitz's family, friends, to all of us who had the chance and honour to know Fitz. He was an outstanding micromorphologist brightly and enthusiastically disseminating knowledge about the tiny world of numerous soils he loved. Looking at his books and papers one also feels his artistic approach to soils, and he was among the first micromorphologists who updated presentation of our results as photographs, drawings, CD-disks.

Fitz loved jokes, dances, talking with young people about everything...

Maria Gerasimova. Kubiëna Medal 2018, Russia

Ewart Fitz – he taught me in 1968 my first set of lectures and labs on Micromorphology at U Aberdeen. I never forgot him or his efforts. I wonderful guy. So sad here he is no longer with us.

John Menzies – Brock University, Canada

Fitz was a great soil morphologist. His power was that he linked observations of soils at all scales, from microscopic to landscape scale.

He made major contributions to WRB. I still remember the discussion with Fitz on the bus in between soil profiles in Western Sicily in 1999, during which he coined the name 'World Reference Base for Soil Resources (WRB)', to replace 'International Reference Base for Soil Resources (IRB)'.

He was a gifted professor who inspired many of us. He leaves behind a vast legacy of important soil observations and pictures, all carefully made accessible in well-organized databases.

Seppe Deckers – KU Leuven, Belgium

[FitzPatrick] This is bad news and I am so sorry to hear of his passing. I had great respect for his research, teaching, and expertise. We were close friends and colleagues. His rye smile and twinkle in his eyes will be sorely missed.

Larry Wilding, Kubiëna Medal 2001, USA

Fitz was my great teacher and savior during my difficult Ph.D days. His scientific contributions to our part of the world via the microscope and interdisciplinary field approaches has been of utmost applaud. Many of the Soil Scientists of Turkey have made great use of his highly beneficial inputs to the Mediterranean soil ecosystems.

Selim Kapur – Cukurova University, Turkey

New Commission Officers 2018-2022

I am pleased to welcome the new elected officers of Commission 1.1. Soil Morphology and Micromorphology:

Chair: **Fabio Terribile** (Italy) 1894 votes

https://www.researchgate.net/profile/Fabio_Terribile

Vice-Chair: **Richard Heck** (Canada) 1959 votes

https://www.researchgate.net/profile/Richard_Heck2

Congratulations to both of them and a lot of success !!

2018 YOUNG MICROMORPHOLOGY PUBLICATION AWARD

Commission 1.1: Soil Morphology and Micromorphology will award the Young Micromorphologist's Publication Award every 2 years: at each International Working Meeting on Micromorphology, and at each World Congress of Soil Science (next WCSS is in Rio de Janeiro, August 2018).

The purpose of this award is to encourage and promote the use of soil micromorphology by young scientists. The Award will be 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. The author must be less than 35 years old at the time of acceptance of the publication, and he/she must be the first author. The paper must be published in an international journal with wide distribution, but not necessarily a scientific journal. The award is not restricted to papers published in the English language only.

On behalf of the selection committee, I am pleased to announce that the 2018 YMPA is awarded to **Diogo Noses Spinola** as the first author of the paper:

Spinola, D. N., de Castro Portes, R., Schaefer, C. E. G. R., Solleiro-Rebolledo, E., Pi-Puig, T., & Kühn, P. (2017). **Eocene paleosols on King George Island, Maritime Antarctica: Macromorphology, micromorphology and mineralogy**. *Catena*, 152, 69-81.

Congratulations Diogo!

The selection committee:

Carmen Gutiérrez-Castorena, Richard Heck, Irina Kovda, Rosa M Poch, Fabio Scarciglia

FORTHCOMING MEETINGS

THE 21ST WORLD CONGRESS OF SOIL SCIENCE IN 2018 IN RIO DE JANEIRO

Join our symposia and attend the commission and division meetings!

Waiting for the final program, the following Commission 1.1. Soil Morphology and Micromorphology Symposia are foreseen:

C1.1.1. Using soil morphology and micromorphology as indicators of soil health

Soil morphology and micromorphology can effectively be used for the diagnosis of the soil quality status regarding its ability for performing multiple functions as e.g. crop production, biodiversity conservation or resilience in front of climate change and other impacts.

C1.1.2. Structural Indicators of Soil Quality using X-ray Computed Tomography

The main objective of this symposium is to bring together scientists who are working on various aspects of x-ray CT image processing and analysis (especially those involved in segmentation, morphometric and spatial analysis), with those working on soil quality (particularly structural aspects), to present and discuss recent advancements and tendencies, and identify current needs and opportunities.

C1.1.3. (Joint symposium with Comm. 1.6 Paleopedology) How to use micromorphology to understand palaeosols and polygenetic soils?

The main objective of this session is to encourage colleagues to present examples that may teach us how to identify (micro)morphological properties of palaeosols and polygenetic soils that can be used as indicators of palaeo-environmental conditions.

INTERNATIONAL WORKSHOP ON ARCHAEOLOGICAL SOIL MICROMORPHOLOGY

Brussels (Belgium), 1st to 3rd August 2018

First Circular



Dear friends and colleagues,

We are happy to announce that the next annual Workshop of the Working Group on Archaeological Soil Micromorphology will be held at the Université Libre de Bruxelles from the 1st to the 3rd August 2018.

The workshop will follow the tradition of the previous workshops: an informal Meeting where participants are invited to bring their thin sections and where microscopy time and the exchange of ideas and experience prevail. For this purpose two rooms with altogether 18 microscopes will be available. To assure sufficient microscopy time, there will be no oral presentation sessions. Instead we will organise a poster session.

The workshop is organised by the Centre de Recherches en Archéologie et Patrimoine, (Université Libre de Bruxelles) and the Department of Archaeology of the Vrije Universiteit Brussel, with support from the Brussels Capital Region and the Department of Earth and Environmental Sciences (Université Libre de Bruxelles).

Registration and expression of interest:

If you wish to attend the workshop, we ask you to send an expression of interest (see attached form) before the 15th of May 2018.

If you have any specific questions, do not hesitate to contact us at

<yadevos@ulb.ac.be> or <luc_vrydaghs@yahoo.co.uk>

Looking forward to meet you in Brussels this summer,

The organising committee,

Yannick Devos, Luc Vrydaghs, Barbora Wouters & Arnald Puy

Expression of interest

**International Workshop on Archaeological Soil Micromorphology,
Brussels (Belgium), 1st to 3rd August 2018**



(please return form via E-mail: yadevos@ulb.ac.be by 15th of May 2018)

First name : _____

Family name: _____

Institution: _____

Position: _____

Adress: _____

E-mail: _____

Telephone: _____

Do you want to attend the workshop: Y / N

Do you want to present a poster: Y / N

If yes, provisional title: _____



2018-2019 INTERNATIONAL SOILS MEETING

January 6-9, 2019 | San Diego, CA

Division: SSSA Division: Pedology

Session title: **Recent Advances and Applications in Soil Micromorphology**

Oral (includes student competition)

Organizers: Craig Rasmussen and Danny Itkin

Moderator: Danny Itkin

Format: Oral Topical Session

Keywords: micromorphology

Session Description: This session aims to regenerate and encourage the use of soil micromorphology in the SSSA. Soil micromorphology is applicable for a wide range of research topics, from pedology and mineralogy, to agriculture and geoarchaeology. The members of all Divisions of Interest are invited to participate and share their experience and ideas regarding this promising multidisciplinary method. transient greenhouse warming

RESEARCH NOTES, BOOKS AND PUBLICATIONS

Oxisolic processes and geochemical constraints on duration of weathering for Neoproterozoic Baltic paleosol

¹Driese, S.G., ²Medaris, L.G., Jr., ³Kirsimäe, K., ³Somelar, P., and ⁴Stinchcomb, G.E.

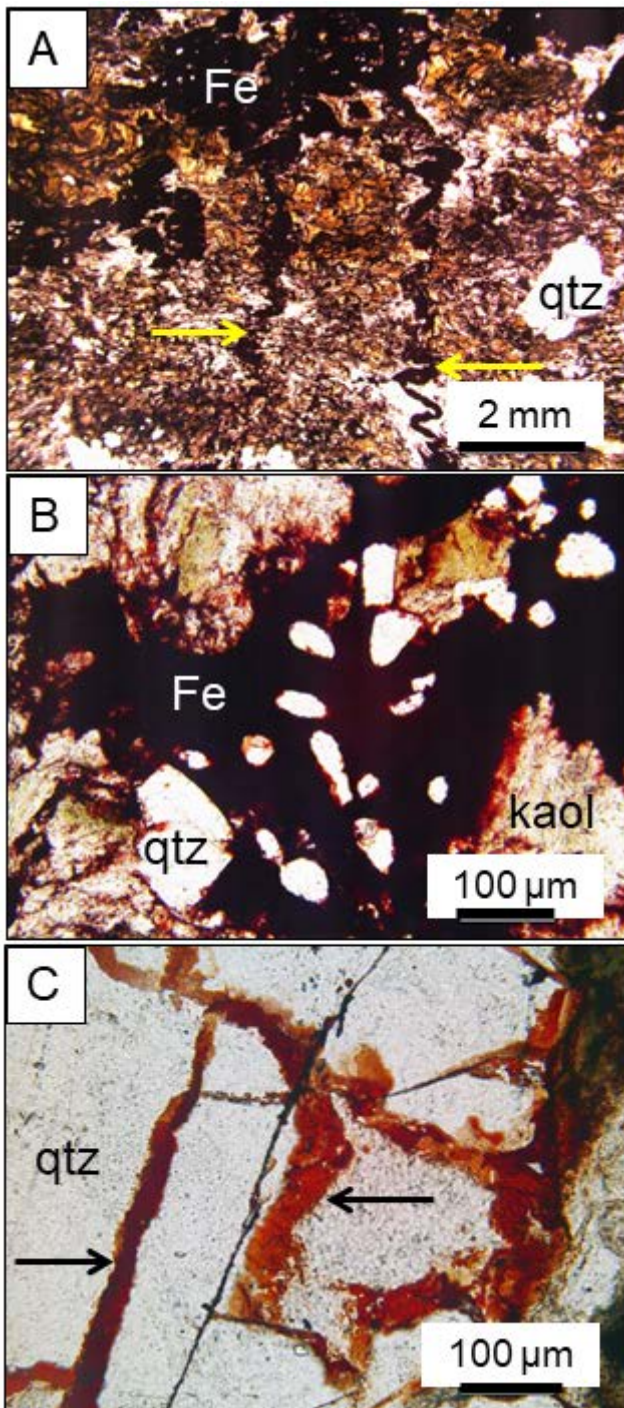
¹Terrestrial Paleoclimatology Research Group, Department of Geosciences, Baylor University, Waco, Texas, USA; ²Department of Geoscience, University of Wisconsin-Madison, USA. ³Department of Geology, Tartu University, Estonia. ⁴Watershed Studies Institute & Department of Geosciences, Murray State University, USA.

Precambrian Research in press.

<https://doi.org/10.1016/j.precamres.2018.02.020>

Abstract

A transient greenhouse warming event during the late Neoproterozoic has been invoked to explain the incongruence of cooler temperatures and intense weathering at high latitudes. We explore this further by examining three deep weathering profiles of the Neoproterozoic Baltic paleosol (600-560 Ma). These profiles have an Oxisolic horizon dominated by quartz, kaolinite, phlogopite/vermiculite, hematite and goethite. Mass-balance calculations (assuming immobile Al_2O_3) for the newly characterized Erra profile studied here showed loss of 25-50% SiO_2 and MgO , complete loss of CaO and Na_2O , 25-50% loss of K_2O , and 25-100% gain in Fe_2O_3 in the upper Oxisolic horizon. pH was estimated as moderately acid to very acidic (4.5-6) during weathering using a new paleo-pH proxy. MAP (1500-1600 mm yr^{-1} : CIA-K) and MAT (13-15(+) $^{\circ}\text{C}$: $\text{PPM}_{1.0}$) were also estimated using bulk geochemical proxies. Calculations for pCO_2 follow an earlier thermodynamic method with evaluation of total mass flux for CaO , MgO , Na_2O , and $\text{K}_2\text{O}_{\text{CALC}}$ (corrected for K metasomatism) during weathering of each protolith material. When considering a range of acceptable values of paleoatmospheric pCO_2 based on earlier studies, a minimum of 1.88×10^5 and a maximum of 1.02×10^6 yrs weathering duration is indicated, consistent with previous interpretations that the Baltic paleosol is a deep paleo-Oxisol. This long weathering duration estimate does not require a “transient Neoproterozoic greenhouse event” to explain the depth (to 30 m) and intensity of weathering, especially given newer paleolatitudinal reconstructions.



Thin-section micrographs from Neoproterozoic Baltic paleosol from Estonia, Erra F190 drillcore profile, in plane-polarized light, showing features indicating deep Oxisolic weathering processes. **(A)** Intense weathering of feldspars to kaolinite-Fe oxide mixture, concentrations of Fe-oxides (Fe) and quartz (qtz), and compactionally distorted vertical cracks (yellow arrows). **(B)** Intergranular concentrations of opaque Fe-oxides (Fe), mainly hematite and goethite, quartz sand and silt infiltrated into fractures (qtz), and feldspar weathered to kaolinite (kaol). **(C)** Cracked quartz grains (qtz), known as runiquartz, with Fe-oxides infilling cracks (black arrows). All images are from a sample depth of 229.3 m, 70 cm below the top of paleoweathering profile.

For more complete analysis please see: Driese, S.G., Medaris, L.G., Jr., Kirsimäe, K., Somelar, P., and Stinchcomb, G.E., in press, Oxisolic processes and geochemical constraints on duration of weathering for Neoproterozoic Baltic paleosol: Precambrian Research, <https://doi.org/10.1016/j.precamres.2018.02.020>.

Giga-images: a useful technique in soil micromorphology

Mario Gutiérrez Rodríguez¹, Maurizio Toscano², Paul Goldberg³, Carlos Dorronsoro⁴ and Francisco Martín Peinado⁴

¹Prehistory and Archaeology Dept, University of Granada, Spain; ²Eachtra Archaeological Projects Ltd, Ireland; ³ Department of Archaeology, Boston University, USA; ⁴ Department of Soil Science, University of Granada, Spain.

Traditionally publications on soil micromorphology are illustrated by photographs that help to complete the transmitted knowledge. Until now it was inevitable that these photographs showed partial and very subjective information of what is actually present in a soil thin section.

Some researchers have tried to show, for educational purposes, all (or a large part) of the soil thin sections. One possibility was to use a commercial flatbed scanner (film scanners do not support the large size soil thin sections) to scan the thin section combined with one or two polaroid sheets (1). The images obtained are useful but only for low magnifications.

Another method for larger images with higher resolution is the use of a SLR reflex camera, polaroid sheets and photography equipment (photography table, spotlights, etc). Some researchers (2) have obtained very good results with this method, obtaining high resolution graphic products (4.8 μ / pixel and 4200 dpi).

However, the qualitative leap is the scanning of thin sections directly from the microscope. The advantages are manifold, not only in terms of higher resolution, but in chromatic reliability. One method is to sweep the thin section by taking individual photographs with the microscope that are then joined with image processing software in a large mosaic (1, 3) resulting image is satisfactory (as can be seen on the aforementioned website) but its final assembly is very laborious and not without difficulties. The resolution with these methods reaches 20,000 dpi for scans at 5x and exceeds 40,000 dpi once the sample is scanned at 10x, resulting in images with a resolution of 1.16 μ / pixel (4) and 0,58 μ (5), respectively.

Nowadays we can obtain large images of the thin sections at high resolution thanks to the concept of Whole Slide Imaging Manual, which allows to generate very high resolution image scans from very small samples. The concept was developed for analytical medicine, specifically for histology. Among the different possibilities, the "Microvisioneer" software developed by Josef Bauer stands out (6), which is very efficient in terms of results and economic cost, compared to other options such as Zeiss AxioScan Z1 (7).

We believe that the development of giga-images of high resolution and true to nature with respect to the samples studied, will be a milestone in our discipline, especially thanks to the multiple possibilities of managing these files, and their online-publication. The latter becomes possible for many publishing houses and editors through the category of "article enrichments". In this sense, Elsevier recently allows to incorporate large images into the publications through a "Virtual Microscope" system to view high resolution images with different magnifications through a zoom (8). Therefore these products can be considered as significant and dynamic elements of a publication on micromorphology, beyond the mere documentation of thin sections, which, by the way, suffer considerable deterioration over time.

These large images can be manipulated in desktop using software such as QuPath, incorporated into web pages through commercial platforms that facilitate their rapid opening, such as "Krpano" (9) or upload them directly to freemium platforms like EasyZoom (10) or totally free like Gigamacro (11).

For all this, it would be advisable to build digital archives of our collections, to ensure their preservation and dissemination, something that can only bring long-term benefits for our discipline.

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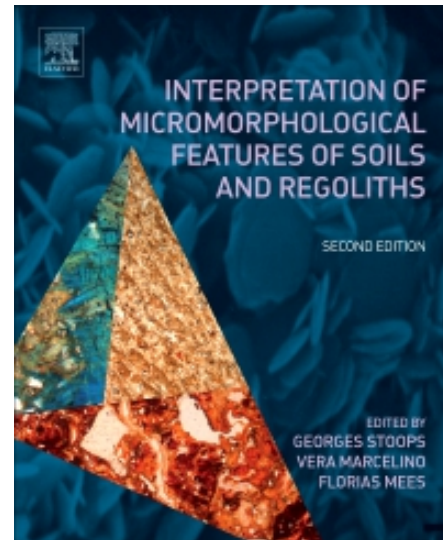
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10. <https://easyzoom.com>)
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Interpretation of Micromorphological Features of Soils and Regoliths

by G. Stoops, V. Marcelino and F. Mees (eds.).
Elsevier, Amsterdam.

The second edition of this book, first published in 2010, will be available this summer, 2018.

Most chapters are updated with new information and extended with references overlooked during the preparation of the first edition. Three chapters remain unchanged: “Palaeosoils and relict soils, a conceptual approach”, by N. Fedoroff, (†), M.A. Courty & Zhengtang Guo; “Features related to faunal activity” by M.J. Kooistra & M.M. Pulleman; and “Saprolites” by S. Zauyah, C.E.G.R. Schaefer & F.N.B. Simas. Two new chapters are added: “Fabric and composition of the groundmass” by G. Stoops & F. Mees, and “Palaeosoils and relict soils, a systematic review” by M. Cremaschi, L. Trombino & A. Zerboni. The chapter on “Pedogenic and biogenic siliceous features” is split into two individual chapters, one on biogenic and one on pedogenic silica in soils. New authors and co-authors were invited to contribute. The total number of (co)authors is extended from 46 in the first edition to 58 in the second, representing 19 countries, and the number of references increased from 2400 to 3500.



For more information consult the website of Elsevier:

<https://www.elsevier.com/books/interpretation-of-micromorphological-features-of-soils-and-regoliths/stoops/978-0-444-63522-8>

The Editors

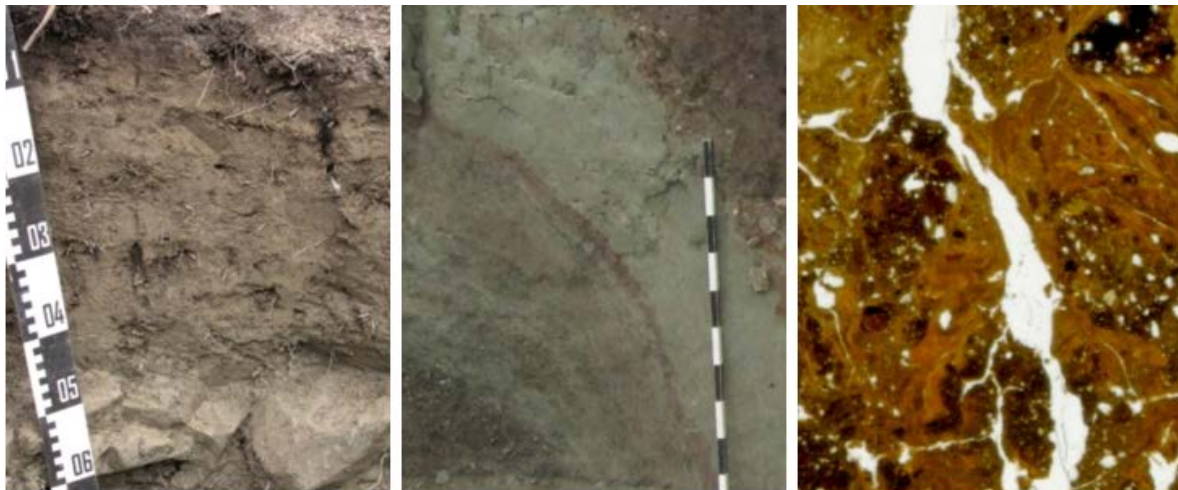
FORTHCOMING COURSES

Soils as archive for natural and cultural change

International course July 4th to 8th, 2018, Würzburg, Germany

This year, the Institute for Geography and Geology of the University of Würzburg (Prof. Dr. Birgit Terhorst) offers a course on "Soils as archive for natural and cultural change", in cooperation with the Moscow State University (Dr. Alexander Makeev), the UNAM Mexico City (Dr. Elizabeth Solleiro-Rebolledo), and the FAU Nuremberg-Erlangen (Dr. Bernhard Lucke). For further information check the 1st circular / registration form:

https://www.dbges.de/de/system/files/AG_Palaeopedologie/int_course_wuerzburg2018_1stcircular.pdf





AMERICAN SCHOOL OF CLASSICAL STUDIES AT ATHENS

54 SOUIDIAS STREET, ATHENS GR 106-76. TEL: +30-210-000-2400.

International Field School on Site Formation, Stratigraphy, and Geoarchaeology in Ancient Corinth

June 16th to 23rd, 2018.

The Malcolm H. Wiener Laboratory for Archaeological Science (ASCSA) in collaboration with the ASCSA Excavations at Ancient Corinth offers a **full week-long** *Field School on Site Formation, Stratigraphy, and Geoarchaeology at Ancient Corinth*. Dr. Panagiotis (Takis) Karkanis, director of the Wiener Laboratory and Paul Goldberg, Professorial Research Fellow University of Wollongong, will supervise the intensive field school. Registered students will participate in the Corinth excavation and will be involved primarily in interdisciplinary field research focused on archaeological context, geoarchaeology, and material sciences.

Through field observations, on-site laboratory analysis, and lectures, the students will receive instruction in the study and analysis of archaeological sediments and deposits, as well as gain experience in the recording of stratigraphy, and the understanding site formation processes. **A maximum of 12 students will be accepted for the course.** Preference is given to advanced students and post-docs with a background in archaeology, and preferably some exposure to the natural sciences as well.

The cost for Room and Board is 300 euros for the entire week. Travel costs to Greece and to the site are not included.

The course will take place from June 16 to 23, 2018. Applications should be sent no later than 30th April to tkarkanis@ascsa.edu.gr. They should include one paragraph explaining why the candidate is interested in participating in the course, a CV, a list of grades (unofficial transcript), and names and email addresses of two referees. Participants who successfully complete the course of instruction will receive a certificate detailing the content of the field school.

Textbooks: *Practical and Theoretical Geoarchaeology* 2006 by Paul Goldberg and Richard I. Macphail (Blackwell) and *Microarchaeology* 2010 by Stephen Weiner (Cambridge University Press).

A syllabus will be emailed 3 weeks before the start of the field school.

Course on Soil Mineralogy and Micromorphology

18th Edition

25th June to 6th July 2018, Buenos Aires

The 18th edition of the "Course on Soil Mineralogy and Micromorphology" will be held at the Post Graduate School "Alberto Soriano" of the Faculty of Agronomy of the University of Buenos Aires, in collaboration with the Soils Institute of the INTA-Castelar, Argentina, from 25 June to 6 July 2018. This intensive two weeks course given by Prof. Dr. Héctor J. M. Morrás every two years since 1985, will count with the collaboration of Dr. E. Favret, Dr. L. Moretti, Dr. F. Behrends, Dr. M. Castiglioni, Ms.Sc. E. Bressan, Mr J. Delgado and Miss J. Laghi on lectures and the practical part of the course on several analytical techniques. The course will be given in Spanish.

The first week is devoted to the study of inorganic fractions of soils, focused on clay mineralogy and concepts on processes of mineral weathering, soil formation and soil organization, including an introduction to analytical techniques particularly X-ray diffractometry. The second week is centered on soil micromorphology including the descriptive system and the principles and techniques of optical and electronic microscopy. During the course numerous examples of application of mineralogy and micromorphology to different fields of research, particularly to soil genesis, soil physics and soil management are exposed and discussed.

For more information, the people interested on the course may contact Prof. Morrás to hmorras@gmail.com or the Post Graduate School to epg@agro.uba.ar or through the site www.epg.agro.uba.ar

SHORT ANNOUNCEMENTS

Guidelines for Analysis and Description of Soil and Regolith Thin Sections

by Georges Stoops (Soil Science Society of America, Madison, Wisconsin, 184 p., 2003).

This manual, published in 2003, is since several months out of print, and only second hand copies are available, often at unaffordable prices. As it is considered a worldwide standard for micromorphological concepts and terminology, the author and the SSSA agreed to publish a second, updated version in spring 2019. Any comment or suggestion that would be helpful to improve the second edition is welcomed by the author.

G. Stoops

The book:

JC Loaiza, G Stoops, RM Poch, M Casamitjana (Eds.) 2015 **Micromorfología de suelos y técnicas complementarias**. Fondo Editorial Pascual Bravo, Colombia.

is already fully accessible from the Soil Micromorphology web page:

http://loess.umcs.lublin.pl/micro_pliki/Page820.htm

THE LAST PAGE

Be a Bt

Better be a Bt horizon
Coat your thoughts with skin
This will keep you warm and safe
Staying in between

Looking at deep future
Remembering far past
Rubifying endless fabric
Painting dots with rust

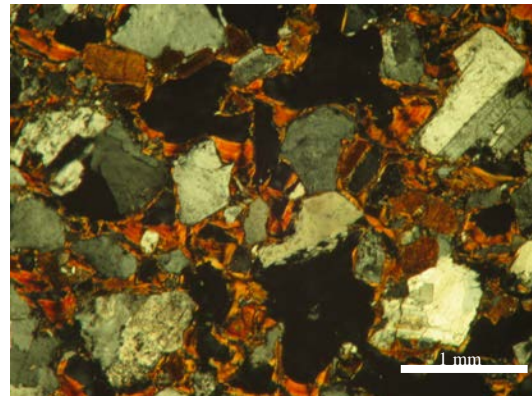
Aren't we all illuviated?
Derived from parenthood
Seek it in your history
That is what you should

So argillise thy B horizon
Firmly hold ped faces
Keep your multi-sheet-like nature
Keep it as key traces

Danny Itkin



Boca de Sábalos, Nicaragua. Image: RMP



Clay coatings and infillings in a Bt of Eastern Pyrenees (XPL) Image: RMP

