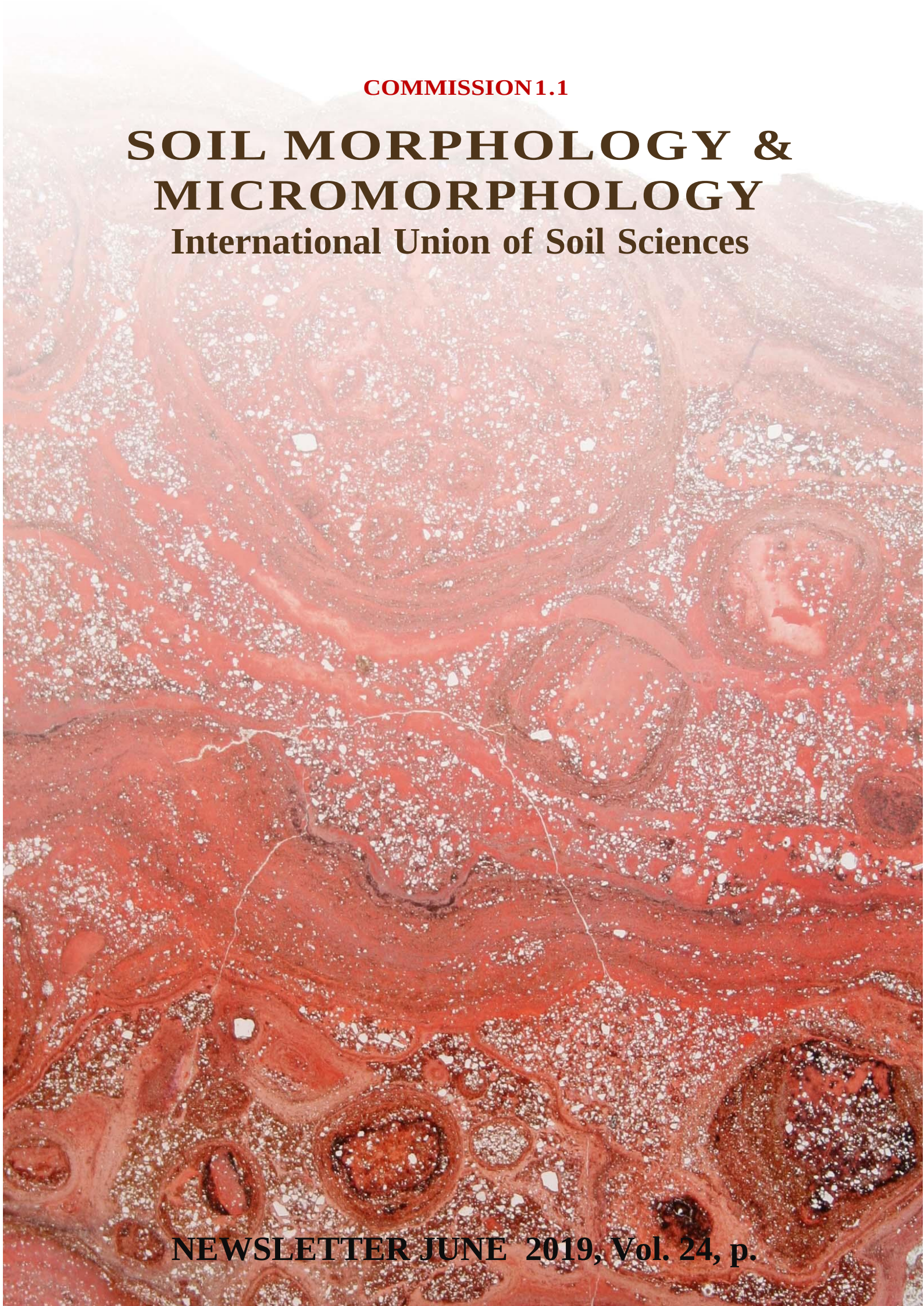
COMMISSION 1.1

SOIL MORPHOLOGY & MICROMORPHOLOGY

International Union of Soil Sciences



NEWSLETTER JUNE 2019, Vol. 24, p.

Newsletter prepared by Commission 1.1 Officers 2018-2022
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Layout and design: CRISP
Cover: Soil from Murray Valley – Australia (observed under incident oblique light) - Fitzpatrick micromorphology collection

Comm. 1.1. Soil Morphology and Micromorphology - IUSS

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LETTERS FROM COMMISSION OFFICERS

Dear all,

It is about eight months from the previous newletter. Follows a short list of updates.

Following our desire to further strengthen the linkages among soil morphologists, we have approached Alfred Hartemink, Chair of the Working Group on Digital Soil Morphometric (http://digitalsoilmorphometrics.org/) with the idea of proposing a joint symposia during the next EGU 2020. At the same time the organization of the next ICSM 2020 at Krakow is proceeding.

As you may recall, we made a general call for colluegues willing to provide some availability to collaborate with us in some new Commission 1.1 activities. This call was made because we have realised that we really need to engage our membership to help fulfil your expectations.

We are please to announce that this phase is over, and that at this moment, we have a small group of scientists who will support us in running new activities. You will read about it in the session concerning "new activities". Of course each of you is still invited to contribute to these activities (please just write to fabio.terribile@unina.it). We need your help !

In this issue we shall continue the "pills of wisdom" section. This time we have an invited contribution from Georges Stoops, one of our "GREAT" soil micromorphologist. This contribution is important because it address few of our critical problems as community but it also shed some light to some future perspective. Thanks Georges ☺

With respect to the general newletter content, of course you are all invited to suggest ideas and contributions to improve our newsletter. Good Reading!

But, sadly, this letter to you has to close with a memoriam of Ryszard Mazurek. We are used to seeing and remember many of our collegues passing away, following the natural path of life, but Ryszard was a young enthusiastic soil micromorphologist with much future ahead of him. He was very active in soil micromorhology and actually he was working for our Commission in organising our 2020 meeting in Krakow. Simply... it will be loss for micromorphology !

Our deep condolence to his young family !

Fabio Terribile & Richard Heck
IUSS Commission Soil Morphology and Micromorphology

PILLS OF WISDOM for soils and soil scientists

Dear reader, this section of our newsletter is devoted to publish small contributions from some of our MAJOR soil scientists, who decided to share with us some of their thoughts on key issues relevant for our Commission. This section is thought to be also open to receive some reactions, comments, suggestions, etc.

In this number we are very much delighted to publish the contribution from prof. Georges Stoops. Of course, Georges does not require any introduction from us being both an absolute scientific reference and one of our most prestigious soil micromorphologists.

Then Georges simply thanks !

Mission of micromorphology

by Georges Stoops Em. Professor, Department of Geology, Ghent University, Belgium

Past and present

There can be no doubt that soil micromorphology has considerably contributed to our understanding of soil genesis, evolution and functioning. Several processes could not have been understood correctly on the basis of bulk analysis, without the micro-spatial approach of micromorphology. Examples are some podzolisation processes, plinthite formation and polygenesis. Moreover, micromorphology frequently acted as a corrector when interpretation of bulk data alone gave rise to results not in agreement with the truth in the field or landscape, e.g., when results of fine earth analyses are in conflict with reality, and where micromorphologists can explain the contradictions by their observations on the nature and position of the coarser fraction in the soils.

The bibliometric analysis of papers dealing with, or using micromorphology, shows a rise of the number of papers till the period 1986 – 90, followed by a, still continuing, global decline. This decline is strongly expressed for “soil” micromorphology, whereas a considerable increase in papers on “archaeological” and, although less, “palaeopedological” micromorphology is noticed. This rise and decline for “soil” micromorphology goes partly parallel with the interest for soil genesis and classification. In the 1960’s till the 1990’s studies on soil genesis and classification were strongly encouraged by USDA, FAO and local soil survey institutes. Discovering and naming new soil types/contexts all over the world prompted pedogenic research, and was an excellent occasion for micromorphologists to contribute to the understanding of processes. However, at the end of the century the more “agronomic” view (mainly in departments of agriculture) on soil science overruled the more “naturalistic” vision (including pedogenesis and classification) (mainly in departments of earth sciences), following the economic context. Public and private sponsors became more interested in exploiting soils than in understanding them, and funding for genetic and micromorphological studies was no priority. Parallel, the success of computerization and the “sand syndrome”, as it was called by Johan Bouma (2018) appeared, interested more in easily quantifiable data of uniform samples that can easily be stored in databases and treated statistically, rather than in the complex multi-anisotropic reality of soils.

Another explanation for the decreasing number of papers in the field of "soil" micromorphology is the global change in publication policy. Formerly it was easy to get a paper published containing only the micromorphological description of one or a few profiles, whereas nowadays a more complete, interdisciplinary study is requested by international journals, and that is a good evolution.

Challenges

During the editing, recently, of two books on interpretation, and the refereeing of many manuscripts of journal papers, I realised again that, as a matter of fact, interpretation of micromorphological features is still largely based on statements of other authors, the comparison with other soils or deduction, rather than on hard proofs. Experimental work in soil micromorphology is almost restricted to a few papers on erosion and crust formation, whereas in geoarchaeology laboratory experiments play an important role, for instance in relation to heating or decomposition of materials. Compared to geoarchaeological micromorphology, soil micromorphology seems slower to apply recent micro-analytical techniques, such as µFTIR, µXRD, µXRF, and gas-chromatography, to name a few. This is remarkable, as in the 1970's and 1980's so called submicroscopic techniques were already a hot item in soil micromorphology (Bisdom and Ducloux, 1983). Even simple microscopic techniques such as UV or blue light fluorescence remain underused. Also in the field of micromorphometry few progress has been made, notwithstanding the new techniques for image analysis. A lack of standardisation of techniques here makes comparison between papers of different authors impossible.

One should not think that there are no longer challenges in micromorphology, and that everything is clear and has be explained. Many features in soil thin sections are still unidentified or badly understood, such as the white, yellow or red grains in many soils on volcanic materials, the formation mechanism of pseudomorphs and its interpretation with regard to environment and chronology, the formation of some nodules and the paragenesis of some pedogenic minerals. Not only in the field of genesis work has to be done, but also in the field of agronomy: how do the different components of fertilizers and insecticides move and evolve in the soil on a microscale? What does that tell us about their effectiveness and risks?

Climate is changing, whether by natural processes, as many earth-scientists think, or by human activities. This means also that soils, as natural bodies, will adapt to the new conditions. Here lies an important challenge for micromorphology: can we predict these changes in soil behaviour, so as to inform policy and decision makers on possible risks or opportunities? For instance, changes in amount and distribution of precipitation will change some soil parameters and behaviour, with impact on agriculture, water quality and supply. Micromorphology and micromorphometry learned us already part of the story of crust formation, but for instance the role of the nature of the clay (size and mineralogy) and its spatial arrangement is still a well-kept secret of nature which has to be disentangled.

Georges Stoops

Bisdom, E.B.A. & Ducloux, J. (Eds.), 1983. Submicroscopic studies of soils. Geoderma 30, 356 p.

NEW ACTIVITES

Over these last months, we have made a general call asking your collaboration for new Commission 1.1 activities. After this call we have acknowledge the availability of 13 colleagues. At this moment, 8 of them confirmed their availability. Then – including the officers - we are about 10 people potentially active on the following 10 selected activities:

- Revise and support Website, youtube channel, twitter, facebook,
- Produce and update commented list of scientific literature: archeology
- Produce and update commented list of scientific literature: x-ray tomography
- Assemble a list of manufacturers of soil thin sections
- Videoclips (5 minutes) of selected speechs (to be placed on our website) including: (i) achievements in soil micromorphology (chosen on the base of most cited paper) ; (ii) people who have received awards, (iii) emerging issues or opportunities
- Teleconference Round tables – once each semester - (e.g. by Skype, Webex, global.gotomeeting.com) about specific topics in soil micromorphology: soil genesis, archeaology, tomography, etc..
- Establish an archive for digital copies of micromorphology publication not readily available through standard digital sources (e.g. WoK, Scopus, etc.). For example proceedings of micromorphology meetings, special project reports, etc
- Create a list of places having large thin section collections, and interact with those places for identifying features to be recorded (e.g. soil type, features, location etc.)
- Reporting about the integrated use of microscopic techniques for various soil applications (carbon sequestration, structure preservation, human and climate impact).
- The microphotograph of the month" should be published both in the micromorphology websites and on the newsletter…

Follows the individuals (with corresponding foreseen activities) who gave us availability:

People		Danny Itkin	Diogo Spinola	Lukasz Uzarowicz	Vedran Rubinić,	Selim Kapur	Marie-Agnès Courty	Farhad Khormali	Rosa Poch	Richard Heck	Fabio Terribile
Affiliation		Ben-Gurion University of the Negev, Israel	University of Alaska Fairbanks, USA	Warsaw University of Life Sciences, Poland	University of Zagreb, Croatia	former Cukurova University, Adana, Turkey	CNRS, France	Gorgan University of Agricultural Sciences, Iran	Universitat de Lleida, Spain	University of Guelph, Canada	University Napoli Federico II, Italy
Theme	Revise and support Website, youtube channel, twitter, facebook,	x						x		x	x
	Produce and update commented list of scientific literature: archeology (Kapur)					x					
	Produce and update commented list of scientific literature: Xray tomography									x	
	List of manufacturer of soil thin sections			x	x						x
	videoclips (5 minutes) of selected speechs (to be placed on our website) including: (i) achievements in soil micromorphology (chosen on the base of most cited paper) ; (ii) people who have received awards, (iii) ...	x			x					x	x
	Telco Round tables – once each semester - (e.g. skype, webex, global.gotomeeting.com) about specific topics in soil micromorphology: xray tomography, soil genesis, etc..							x		x	x
	Archive for digital copies of micromorphology publication not readily available through standard digital sources (e.g. WoK, Scopus, etc.). For instance Proceedings micromorphology meetings, etc	x		x							
	List of places having large thin section collections and interact with those places for identifying features to be recorded (e.g. soil type, features, location etc.)									x	x
	Reporting about the integrated use of microscopic techniques for various soil applications (carbon sequestration, structure preservation, human and climate impact).						x				
	The microphotograph of the month" published both in the micromorphology websites and on the newsletter...								x		

FORTHCOMING MEETINGS

INTERNATIONAL WORKSHOP ON ARCHAEOLOGICAL SOIL MICROMORPHOLOGY
Basel, Switzerland, 2nd to 4th September 2019
Organising Committee (Philippe Rentzel, Kristin Ismail-Meyer, Christine Pümpin, Sarah Lo Russo, David Brönnimann)
For info: geoarchaeology@unibas.ch

For more information, see the attached 2nd circular. Please send your completed registration form to geoarchaeology@unibas.ch

3rd Intensive Training Course on Soil Micromorphology (UdL)

PRE-REGISTRATION: 21/02/19 until 25/09/19; REGISTRATION PERIOD: 21/02/19 fins al 25/09/19; TUITION: 400 €; MAXIMUM OF STUDENTS: 30; CREDITS: 4.35 ECTS
COORDINATION: Rosa Maria Poch Claret (rosa.poch@macs.udl.cat); ORGANIZATION: Centre de Formació Contínua UdL C/Jaume II, 71 Campus de Cappont 25001 – Lleida
Tlf: 973703382. formaciocontinua@udl.cat
All information are available at http://www.cfc.udl.cat/fc/curso/2322

Save the date for ICSM 2020 - INTERNATIONAL CONFERENCE ON SOIL MICROMORPHOLOGY – Kraków 30 August – 3 September 2020
Please visit http://www.icosm2020.sggw.pl/

VENUE: Jagiellonian University in Krakow, 3rd Campus, Gronostajowa Str.
CONFERENCE ORGANIZERS

- International Union of Soil Science, Division 1. Soil in Space and Time, Commission 1.1 - Soil morphology and micromorphology
- Soil Science Society of Poland
- Jagiellonian University in Krakow
- Agricultural University in Krakow
- Warsaw University of Life Sciences – SGGW

Organization is ongoing please check the status at http://www.icosm2020.sggw.pl/
NATIONAL ORGANIZING COMMITTEE

- Wojciech Szymański (Jagiellonian University, Krakow) – VICE-CHAIR
- Łukasz Uzarowicz (Warsaw University of Life Sciences – SGGW) – SECRETARY
- Marek Drewnik (Jagiellonian University, Krakow)
- Bartłomiej Kajdas (Agricultural University, Krakow)
- Przemysław Mroczek (Maria Curie-Skłodowska University, Lublin)
- Zbigniew Zagórski (Warsaw University of Life Sciences – SGGW)
- Tomasz Zaleski (Agricultural University, Krakow)

GENERAL SCHEDULE
24–30 August 2020- Micromorphology Course
–the course should be finished 29/30 August

30 August – 3 September 2020 – Main Conference

30 August (Sunday) – registration (in the afternoon) and ice-breaking party, Faculty of Forestry, Agricultural University in Krakow,; visit in the Museum of Soils

31 August (Monday) – registration, opening session, plenary sessions, poster session 1, afternoon: visit in the Krakow city center (undergrounds beneath the Main Market Square, a walk around the city center, dinner in a restaurant)

1 September (Tuesday) – Plenary sessions, poster session 2, IUSS Business Meeting, Gala Dinner

2 September (Wednesday) – Mid-conference excursion (Kraków and its close vicinities)

3 September (Thursday) – Plenary sessions, summary and closing ceremony

4, 5 and 6 September 2020 – Post-Conference Excursion. (from Friday to Sunday)

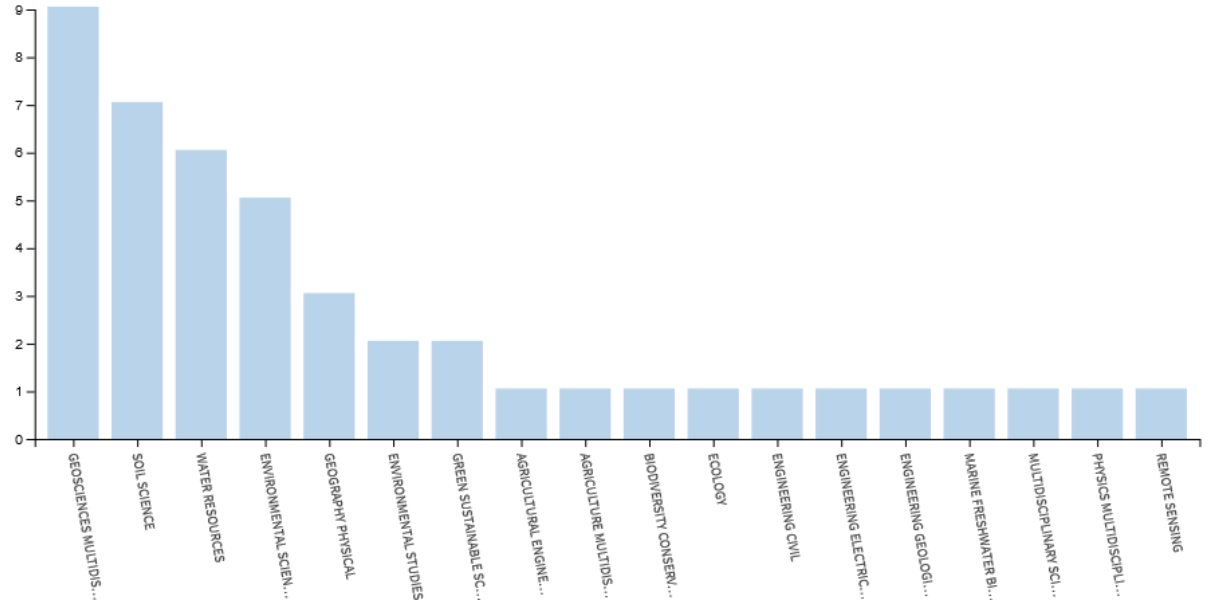
–Polish Upland tour with emphasis on: contemporary soils (e.g. Chernozems, soils developed on gypsum and carbonate rocks), paleosols in loess, influence of metal mining on soil environment etc.

A GRAPHICAL OVERVIEW OF OUR RESEARCH PAPERS

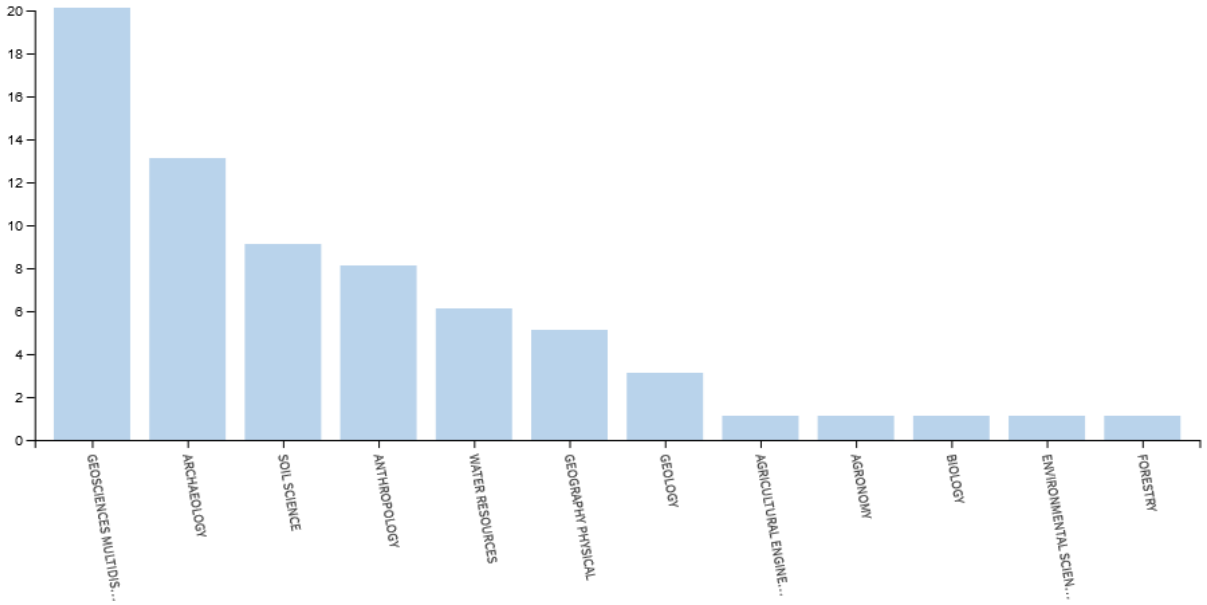
Following the previous issue, here we report an enlarged graphical overview (after WoS) about the occurrence of papers (27/06/2017-27/06/2019) – ranked for subject science category - having "soil micromorphology" and "soil morphology" as topic. Of course each paper can be ascribed to more than one science category.

The overall picture provides a rapid view about the strength of both soil micromorphology and soil morphology as linkage between different disciplines.

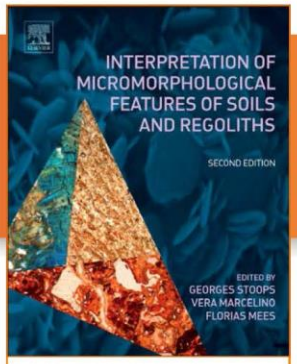
"Soil Morphology" (23 papers)



"Soil Micromorphology" (35 papers)



RESEARCH NOTES, BOOKS AND PUBLICATIONS



Interpretation of Micromorphological Features of Soils and Regoliths, Second Edition

Edited by : Georges Stoops, Department of Geology, Ghent University, Belgium; Vera Marcelino, Department of Geology, Ghent University, Belgium; Florias Mees, Department of Geology, Royal Museum for Central Africa, Tervuren, Belgium

ELSEVIER

ISBN: 978-0-444-63522-8
PUB DATE: September 2018
LIST PRICE: £175.00 / $220.00 / €205.00
FORMAT: Paperback
PAGES: 982

1. Micromorphology as a tool in soil and regolith studies
2. Colluvial and mass wasting deposits
3. Saprolites
4. Pedoplasmation: formation of soil material
5. Groundmass composition and fabric
6. Pedogenic siliceous features
7. Biogenic siliceous features
8. Authigenic silicate minerals – sepiolite-palygorskite, zeolites and sodium silicates
9. Calcium carbonate features
10. Gypsic features
11. Salt minerals in saline soils and salt crusts
12. Phosphatic features
13. Sulphidic and sulphuric materials
14. Textural pedofeatures and related horizons
15. Redoximorphic features
16. Features related to faunal activity
17. Soil organic matter
18. Organo-mineral surface horizons
19. Physical and biological surface crusts and seals
20. Frost action
21. Vertic features
22. Spodic materials
23. Oxic and related materials
24. Lateritic and bauxitic materials
25. Regoliths and soils on volcanic ash
26. Anthropogenic features
27. Archaeological materials
28. Palaeosoils and relict soils, a conceptual approach
29. Palaeosoils and relict soils, a systematic review
30. Micromorphological features and their relation to processes and classification

An updated edition of the first thorough state-of-the-art reference work in the field of genetic interpretation of micromorphological features

KEY FEATURES

- Provides an exhaustive update of the first edition
- Covers soil development but also related topics, making micromorphology more accessible for geographers , archaeologists and quaternary geologists
- Includes thematic treatment of a range of soil-related topics
- Features input from a multidisciplinary team, ensuring thorough coverage of pedological, archaeological and geological disciplines
- Contains more than 3700 references to literature

Interpretation of Micromorphological Features of Soils and Regoliths, Second Edition, provides researchers and students with a tool for the interpretation of features observed in thin sections. After an introduction, micromorphological aspects of regoliths (e.g., saprolites, transported materials) are highlighted, followed by a systematic discussion of the micromorphological expression of pedogenic processes for various diagnostic horizons, materials and processes. Covered topics include freeze-thaw features, redoximorphic features, calcareous formations, gypsiferous soils, textural features, spodic horizons, oxic materials, volcanic materials, organo-mineral surface horizons, surface crusts, laterites, salts, biogenic silica, pedogenic silica, authigenic silicates, phosphates, sulphidic and derived materials, and features related to faunal activity. The last chapters deal with the micromorphological aspects of anthropogenic features, archaeological materials, and palaeosoils. *Interpretation of Micromorphological Features of Soils and Regoliths* is written by a team of well-known international experts in the field, using a single set of concepts and terminology, making it a valuable interdisciplinary reference.

Please visit elsevier.com/books/isbn/9780444635228
Enter code EARTH318 for up to 30% off and free shipping!

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The manuscript of the second edition of the "Guidelines for Analysis and Description of Soil and Regolith Thin Sections" has been submitted to the SSSA. It will be a full-colour edition.

- The Soils of Turkey, Kapur, Selim, Akça, Erhan, Günal, Hikmet (Eds.) The book is dedicated to E.A. FitzPatrick; ISBN 978-3-319-64392-2 Springer World Soil Book Series
-

List of publications as suggested by our members

Karkanas, P., and Goldberg, P., 2018. Reconstructing Archaeological Sites: Understanding the Geoarchaeological Matrix. Wiley-Blackwell, OxforKarkanas, P., and Goldberg, P., 2018. *Reconstructing Archaeological Sites*: *Understanding the Geoarchaeological Matrix*. Wiley-Blackwell, Oxford.

Goldberg, P., C.E. Miller, N.J. Conard, 2019. Micromorphology and site formation at Geißenklösterle Cave, Germany. In: N.J. Conard and S. Münzel (Eds), *Geißenklösterle II:* Kerns Verlag: Tübingen.

Patania, I., Goldberg, P., Cohen, D. J., Wu, X., Zhang, C., & Bar-Yosef, O., 2019. Micromorphological analysis of the deposits at the early pottery Xianrendong cave site, China: formation processes and site use in the Late Pleistocene. *Archaeological and Anthropological Sciences*, 1-21. https://doi.org/10.1007/s12520-019-00788-6

Goldberg, P., 2018. Micromorphology. In: S. L. López Varela (Ed.) *The Encyclopedia of Archaeological Sciences*, pp. 1-4. John Wiley & Sons, Hoboken.

Gutiérrez-Rodríguez, M., Toscano, M. and Goldberg, P., 2018. High-resolution dynamic illustrations in soil micromorphology: A proposal for presenting and sharing primary research data in publication. *Journal of Archaeological Science*: Reports 20, 565-575.

Goldberg, P., McPherron, S.P., Dibble, H., Sandgathe, D., 2018. Stratigraphy, Deposits and Site Formation, in: Dibble, H., McPherron, S.P., Goldberg, P., Sandgathe, D. (Eds.), *The Middle Paleolithic Site of Pech de l'Azé IV*. Springer International, pp. 21-74.

Goldberg, P., Pérez-Juez, A., 2018. The hidden record at Torre d'en Galmés, Menorca. Accounts from soil micromorphological analysis. *PYRENAE* 47, 1-27.

FORTHCOMING COURSES AND OPPORTUNITIES

SUMMERSCHOOL "CERTIFICATE IN ARCHAEOLOGICAL SOIL MICROMORPHOLOGY AND PHYTOLITH ANALYSIS"

A summer, from 5 to 10 August 2019 at the Université Libre de Bruxelles organises for the first time a Summerschool "Certificate in Archaeological Soil Micromorphology and Phytolith Analysis". It is a one-week training programme in English focussing on the basics of archaeological soil micro morphology and phytolith analysis, including intensive microscopy sessions and an on-site visit in the Brussels area.

CERTIFICATE IN ARCHAEOLOGICAL SOIL MICROMORPHOLOGY AND PHYTOLITH ANALYSIS

Summer School - 5 to 10 August 2019 - Université libre de Bruxelles

Course description

This training programme builds on the unique expertise developed by the Research Centre in Archaeology and Heritage at the Université libre de Bruxelles combining micromorphology and phytolith analysis, shedding a new light on archaeological stratigraphy and the identification of human activity.

Programme

The Certificate in Archaeological Soil Micromorphology and Phytolith Analysis is a one-week summer training programme in English including preparatory readings, high-quality lectures, intensive microscopy sessions and an on-site visit in the Brussels area. It is divided into two courses:

1. Introduction to archaeological soil micromorphology
   - › General introduction to soil micromorphology: concept and principles
   - › Introduction to optical soil mineralogy
   - › Application of soil micromorphology to archaeology
2. Introduction to phytolith analysis
   - › General introduction to phytolith studies: concept and principles
   - › Introduction to phytolith studies in archaeological soil thin sections
   - › Application of phytolith analysis to archaeology

Selected participants will receive a list of required preparatory readings. The final assessment will take place at the end of the week. It will be based on image analysis and the description and interpretation of a soil thin section.

Credits

Participants will receive 10 credits upon successful completion of the programme.

ULB CONTINUING EDUCATION SUMMER SCHOOL — CReA Patrimoine Centre de Recherches en Archéologie et Patrimoine — urban.brussels — International Phytolith Society — Laboratoire G-TIME

Learning outcomes

This training programme aims to provide participants with the basic skills required for performing a comprehensive micromorphological study. They will learn:

› the basic principles of soil micromorphology, optical mineralogy and phytolith studies
› how to perform microscopic observations on soil thin sections, describe soil thin sections and interpret their observations
› how to integrate their data within the larger framework of geoarchaeological studies.

Target audience

This programme is designed for graduate students, PhD students, researchers in archeology, history, art history, geology, agronomy, anthropology and for professionals in archaeology. It is accessible to candidates holding a bachelor degree or through recognition of prior learning.

Course leaders

Sébastien Clerbois, Prof.
Yannick Devos, Researcher
Luc Vrydaghs, Researcher
Research Centre in Archaeology and Heritage, ULB
http://crea.ulb.ac.be
Nadine Mattielli, Prof., Laboratoire G-TIME, ULB
http://gtime.ulb.ac.be

Practical information

› Application: https://bit.ly/2UU4YPx
Applications will be reviewed by the jury in early April. Enrollment is limited to 15 participants.

› Fees: €500 (tuition and coffee breaks)
Accomodation fee (student house, optional): €235

› Location: Solbosch Campus, ULB, Brussels

› More information:
summerschool@ulb.ac.be | + 32 (0)2 650 67 35

Master of Advanced Studies In Archaeology (Universitat de Barcelona) - Course in Geoarchaeology and Soil Micromophology in Archaeology: Language: Spanish

http://www.ub.edu/estudis/en/mastersuniversitaris/eaarqueologia/introduction

http://www.ub.edu/prehist/images/pdf/MASTER_x_Mail_ANG.pdf

Contact: M. Mercè Bergadà bergada@ub.edu/ master.arqueologia@ub.edu

4 YEAR FULLY-FUNDED DOCTORAL POSITION IN GEOARCHAEOLOGY

Offer: 4 year fully funded doctoral position in Geoarchaeology Start date: 01/01/2020 Space and landscape: use of space in landing places and hubs of trade, and landscape development in the coastal areas of the North Sea and the eastern Mediterranean, related to exchange.
We are opening a callfor a 4 year fully-funded doctoral position in geoarchaeology (micromorphology). The research project is aimed at the integrated study of the infrastructure, spatial organization, layout and environmental context of trade hubs through the application of detailed geoarchaeological, microstratigraphic and palaeoenvironmental research of Bronze Age Cyprus and the early and high medieval North Sea World.
This call is aimed at the recruitment of a PhD candidate to perform the geoarchaeological component, with a special focus on the micromorphological analysis.

For any additional information, please contact Dr Barbora Wouters (bwouters@vub.be). Applications are due by June 2019.The selected candidates will be invited for a job interview at the Vrije Universiteit Brussel on 2 July 2019.

REPORT ON PREVIOUS MEETINGS

REPORT ON THE ARCHAEOLOGICAL SOIL MICROMORPHOLOGY MEETING

The last annual working session on Archaeological Soil Micromorphology was organized by Anne Pozswa[1] and Anne Gebhardt[1,2] ([1]Laboratoire Interdisciplinaire des Environements Continentaux, [2]Institut National de Recherche en Archéologie Préventive) has been held at the Faculty of Sciences - University of Lorraine (Nancy, France), the 11-12 April 2019, in practical class rooms, kindly made available by the Department of Geosciences.

During this informal microscopy session, the 21 participants from Italy, Turkey, Spain, Germany, France, Switzerland and Czech republic were invited to bring their soil thin sections and had two days for exchanging ideas and experiences looking at microscopic features. Many topics have been discussed as flood-plain or cave sediment deposits, colluvium and landscape dynamic, floors and mud bricks organisation, weel versus plough features, fire traces from slash-and-burned cultivation and charcoal mounts. All these features belonging to different sites associated to many occupations types from Paleolithic to Medieval.

The next “rendez-vous” will be the workshops in Basel (2nd to 4th September 2019 ; registration open until 31th May 2019 ; geoarchaeology@unibas.ch) and Paris (July, 2020).

IN MEMORIAM OF RYSZARD MAZUREK

by Tomasz Zaleski (Institute of Soil Science and Agrophysics - University of Agriculture, Krakow)

The 3th of December, 2018, Ryszard Mazurek PhD left suddenly to eternity, our late lamented friend, an educator, an unusually cheerful and modest man. We accepted this message with deep sadness.

Ryszard was born in August 31, 1970 in Kosice (Poland). In 1989 he began studies at the Faculty of Agriculture of the Agricultural University in Krakow. In 1994, he obtained a degree of Master of Science in Agriculture. In 2001, he received his degree of Doctor of Philosophy (PhD) in Agricultural Sciences and in 2015 he gained his habilitation degree in Agricultural Sciences. Colleague Ryszard Mazurek realized an entire career in the Department of Soil Science and Soil Protection of the Agricultural University in Krakow. He was an active member of the Polish Society of Soil Science (PTG) and the International Union of Soil Sciences (IUSS).

The scientific interests of Ryszard included many areas, but above all, soil micromorphology, the origin and classification of soils and geostatistics. Following his predecessors, Ryszard was the main initiator and organizer of modernizing the soil micromorphology laboratory of the Department of Soil Science and Soil Protection at the University of Agriculture in Krakow.

Privately, he was a practicing farmer, therefore his research interests had a large application aspect. Colleague Ryszard Mazurek had a great ability to win over peoples, which is why he cooperated with many researchers from Poland and abroad. In his prematurely interrupted career he took part in many researches projects, both national and international, performing the function of head or a researcher. The results of his researches were published in leading scientific journals. Recently, he undertook the co-organization of the 16th International Conference on Soil Micromorphology in Krakow (2020).

His example has helped many young people find passion and talent in their research. Despite his young age, Ryszard was a true master, while remaining a friend. Many young scientists have benefited from his knowledge and skills. He took care of students and young scientist from Poland, Spain, Turkey and Ukraine. This attitude has been appreciated by students. Ryszard

received the "Top Doctor" student award, and in 2010 he received the award in the plebiscite of students of the University of Agriculture in Krakow.

For his scientific, didactic and educational achievements, Ryszard was awarded by the President of the Republic of Poland with the Bronze Medal for long-standing service, and the Silver and Gold Badge of the Polish Society of Soil Science and also awarded by the Minister of Science and Higher Education of Poland Award for team didactic achievement.

Five times he won the Award of the Rector of the University of Agriculture in Krakow. Ryszard was a great friend, a good and noble man. He brought joy and heart to the team. His smile will always remain in our memory.

Dear friend, rest in peace!

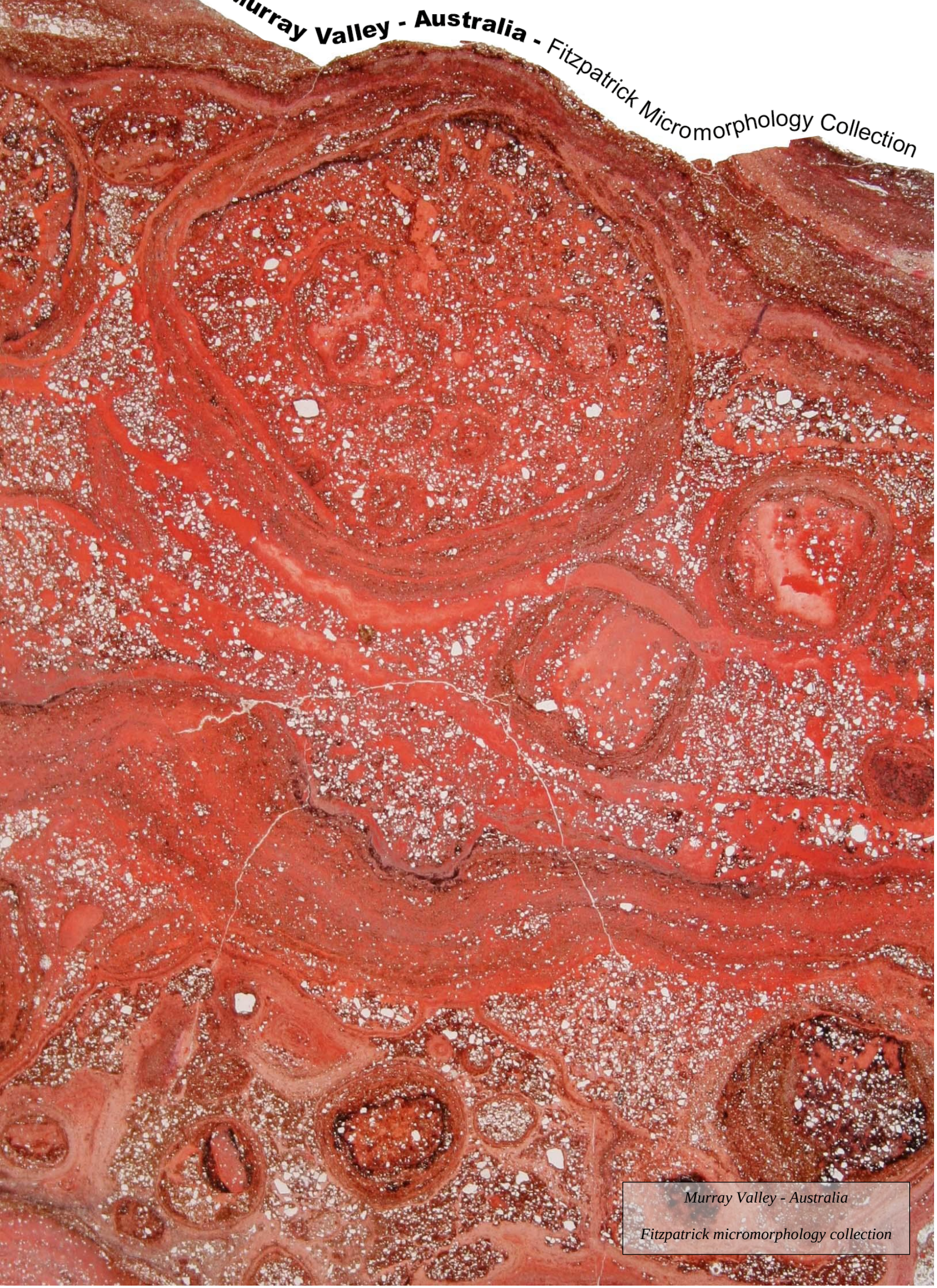
Friends

THE LAST PAGE

My favorite take-home messages from Geoorges Stoops letter.

Fabio

- *Several processes could not have been understood correctly on the basis of bulk analysis, without the micro-spatial approach of micromorphology.*
- *micromorphology frequently acted as a corrector when interpretation of bulk data alone gave rise to results not in agreement with the truth in the field or landscape*
- *During the editing, recently, of two books on interpretation, and the refereeing of many manuscripts of journal papers, I realised again that, as a matter of fact, interpretation of micromorphological features is still largely based on statements of other authors, the comparison with other soils or deduction, rather than on hard proofs.*
- *Experimental work in soil micromorphology is almost restricted to a few papers*
- *soil micromorphology seems slower to apply recent micro-analytical techniques, such as µFTIR, µXRD, µXRF, and gas-chromatography, to name a few. This is remarkable, as in the 1970's and 1980's so called submicroscopic techniques were already a hot item in soil micromorphology (Bisdom and Ducloux, 1983).*
- *Also in the field of micromorphometry few progress has been made, notwithstanding the new techniques for image analysis. A lack of standardisation of techniques here makes comparison between papers of different authors impossible.*
- *One should not think that there are no longer challenges in micromorphology, and that everything is clear and has be explained. Many features in soil thin sections are still unidentified or badly understood,*
- *Climate is changing, ... soils, as natural bodies, will adapt to the new conditions. Here lies an important challenge for micromorphology: can we predict these changes in soil behaviour, so as to inform policy and decision makers on possible risks or opportunities?*
- *the role of the nature of the clay (size and mineralogy) and its spatial arrangement is still a well-kept secret of nature which has to be disentangled.*


Murray Valley - Australia - Fitzpatrick Micromorphology Collection
Murray Valley - Australia
Fitzpatrick micromorphology collection