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All contributions are welcome and should be send to the editor.

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Editorial

At this time of the year eight years ago I was planning a trip to Vienna in the first stage of the handover of the role of Secretary General of the International Union of Soil Science from Winfried Blum to me. Now as we approach the end of 2010 I have recently spent my time sorting through a mountain of paperwork which has accumulated in the last eight years, deciding what should be kept and what can be 'recycled', prior to transferring what remains to my successor Alfred Hartemink. Fortunately in these days of electronic data storage a small data stick will remove the need for transferring at least part of the many kilograms of paper. Having stated when, in 2002, I accepted the invitation to be Secretary General of IUSS that I would do this for a maximum of two terms, I am stepping down at the end of the year, having seen IUSS continue from strength to strength. I am pleased that Alfred Hartemink, who has been Deputy Secretary General for this eight year stint, was selected by Council at its recent meeting in Brisbane to take on the role of Secretary General from January 2011. Alfred will be supported by Alex McBratney as Deputy Secretary General. Having known both Alfred and Alex for many years I know that the Union is in good hands and I look forward to enjoying the fruits of their labours as they continue the developments within IUSS to make it 'your' Union.

Looking back over the past eight years we have made tremendous progress, particularly in terms of our communication with the membership. The IUSS website was established in 2001 and with Alfred's enthusiasm this has become a major part of the IUSS and its communication with members. Alfred has devoted an enormous amount of time in developing and upgrading the site so that it serves the international community of soil scientists and many others, providing a wide range of information, both current and historical. The 'hits' on the site continue to grow. One of the initiatives taken by Alfred was to archive the Proceedings of the World Congresses of Soil Sciences. These are all available from the first meeting in Washington in 1927 in pdf format. This is a significant service to the soil science community as whilst these are available in a small number of libraries around the world their access was very limited, yet, particularly in the early Congresses, there are some seminal papers published in the Proceedings. Having these on the website enormously increases their accessibility and I would recommend to anyone that it is worth spending some time looking through these as there are many ideas which have 'surfaced' again in later years a long time after they were first raised. I note for example in the very first set of Proceedings a discussion on nitrogen provision to crops in organic and fertiliser based systems, a debate which continues today! The early Congresses also reveal a very different lifestyle and pace of living, particularly shown in the reports of field excursions.

When Alfred and I began our terms in 2002 the Bulletin was published in paper format and had a circulation to old ISSS members and a few Libraries. Changing the status of membership from individual as in ISSS to National Society membership as is the case in IUSS made in unfeasible to send out a paper version to the membership which had increased to in excess of 40,000. Initially we continued to publish the Bulletin in paper form, but through a transition of both paper and electronic we now publish the Bulletin only in electronic format. This has greatly increased the readership of the Bulletin and has also saved a number of trees! Following on from the shift to electronic Bulletins, Alfred introduced in 2005 the monthly 'Alerts'. This short monthly message is very widely appreciated by the membership.

During the last eight years the 'new' scientific structure of IUSS has fully settled down. The four Divisions

have, through their chairs, sought to provide focus and leadership within their broad areas of Soil Science. The current four Divisions and twenty one Commissions have varied in their levels of activity. Some Commissions have annual meetings and encourage the involvement of their membership through regular updates and newsletters; others show far less evidence of activity and appear to 'spark to life' only when a World Congress has to be planned! Division Chairs and other members of the Executive Committee have sought to encourage the less active parts of the Union to involve their members and where appropriate join with other Commissions to increase their level of activity, sometimes with success, but at other times the encouragement has been shunned! If we are to maintain a high profile for all areas of our subject we must ensure that activity takes place across the whole range of subjects covered by the Union. This will continue to be a task for the Union in the future.

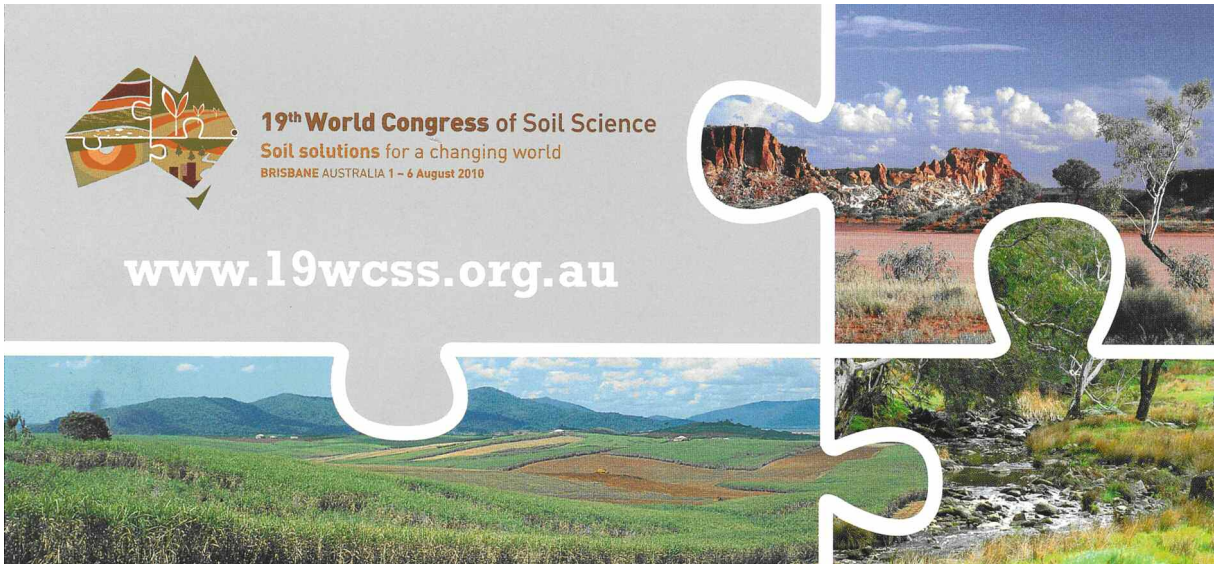
Over the last eight years the Union has continued its involvement in ICSU (the International Council for Science) and in particular, through close collaboration with fellow Unions in the broad Geo-Sciences area, has joined a Geo-Unions caucus which meets outside the main programme of ICSU meetings. This group seeks to ensure that the 'Geo-Sciences' are fully represented within the ICSU agenda in particular in the development of priorities for research and policy foci. In addition the group encourages involvement of other Unions in its activities and meets with other bodies, such as UNESCO to ensure that the key role played by the broad Earth Sciences in many aspects of our lives is fully recognised. In part arising from the initiative of the 'Geo-Unions' caucus, IUSS became a Founding Partner in 'The International Year of Planet Earth'. The focus of IYPE was to encourage wider awareness of and involvement in the Geo-Sciences amongst children and the broader general public and to raise awareness amongst policy makers at all levels, of the importance of the Geo Sciences. As part of the IYPE programme, Alfred Hartemink, David Dent and John Kimble produced on behalf of IUSS and ISRIC a booklet about soils entitled 'Earth's Living Skin'. This was produced in paper format but is also available on the IUSS website in several languages.

During my eight years as Secretary General I have been helped and supported by many people and I would like to take this opportunity to thank you all. In particular I would like thank the two Presidents during my eight years, Don Sparks and Roger Swift, Gary Petersen and Neal Menzies who were the Vice –Presidents, the Chairs of Divisions, Jim Gauld the Treasurer, John Kimble, Robin Harris and in particular Winfried Blum who has always been there to provide support when needed. My time as Secretary General has been very enjoyable and it has been a particular pleasure working with Alfred Hartemink, whom I thank most sincerely for his support and friendship. I believe that in the last eight years we have moved the IUSS forward and have made good progress in increasing the awareness amongst the public and policy makers of the importance of soil science and soil scientists in many aspects of our daily lives.

Finally, I wish Alfred and Alex well for the future, I am sure that under their stewardship the progress in IUSS will continue and the service IUSS provides to its to members will continue to increase. I am sure that you, the membership, will provide them with the support and encouragement you have given me over these last eight years.

Stephen Nortcliff
Reading

19th World Congress of Soil Science



Brisbane Convention & Exhibition Centre, Brisbane, Australia 1–6 August 2010

When more than 1900 of the world's foremost experts on soil came together to discuss the impact of our changing environment on soil, there were some heavy-hitting issues on the agenda. With the world's population expected to top 9 billion by 2050, global food security in times of climate change and variability and resource scarcity was the key issue along with strong local debates e.g. how can we have both mining and agriculture. And fundamentally, the researchers and scholars tackled topics such as soil history and civilisation, soil biology and even soil forensics.

Welcome reception attendees 1496
Dinner attendees 725
BBQ attendees 501

Excursions
1. South coast 78
2. Bay side 75
3. Brisbane city 35
4. Sunshine coast 63
5. Griffith uni 18
6. Lockyer valley 45
7. Ipswich 28

Pre/post tours
1. Volcano coast 23
2. Agricultural heartlands 42
3. North Island NZ 24
4. Laterites WA 7
5. Grape to Graze SA 14
6. Tropical landscapes Qld 21

Event Profile

The 2010 Congress, hosted by the Australian Society of Soil Science Inc. (ASSSI), featured a program of 8 keynote speakers, 343 oral presentations (including 65 lead invited speakers), over 6 concurrent sessions for 4 days, 1227 research posters and a dynamic program of public events and scientific tours in Australia and New Zealand.

Registered delegates numbered 1914 (with a total congress population of about 2100), from 68 countries. Australia last hosted the event in 1968.

The Brisbane meeting had as its theme "Soil solutions for a changing world" in recognition of the need to revisit the way in which soil science contributes to the unique challenges facing the world over the next few decades.

Congress Excursions

Seven 'in-congress excursions' were conducted on the day preceding and the day following the Congress. This was a departure from the traditional 'mid congress' field trip. Themes for the tours were diverse, correlating well with the overall Congress theme. Tours with an agricultural focus included destinations such as the Sunshine Coast, Brisbane Bayside and the Lockyer Valley, all within 100 km of Brisbane. The Brisbane City and Ipswich tours viewed issues related to civil infrastructure, mining, waste disposal and land rehabilitation, while both the Sunshine coast and South Coast tours covered issues such as acid sulfate soils and the urban/agricultural interface. Running these tours on weekends provided some additional challenges, but all were successful and received positive feedback.

Congress Tours

Delegates attending the congress also participated in a successful program of longer tours, five within Australia and one to New Zealand. The tours ranged geographically from the temperate regions of New Zealand, to Western Australia, South Australia and Victoria, the subtropical landscapes of northern New South Wales, and right up to the tropical coastal regions of Queensland that fringe the Great Barrier Reef. The soil types examined ranged in age from very recent volcanic soil to some of the most ancient and highly weathered soil on the planet.

The issues covered by these tours included: the pedology of soil formed from widely varying parent materials and climates, to soil- and soil management-related issues that are challenging the sustainability of our agriculture, and some of our most productive soil for horticulture and viticulture.

Social events

These were very well attended. The Welcome Reception and Gala Dinner were held onsite at the Brisbane Convention & Exhibition Centre, and an offsite barbecue took place at the Queensland Maritime Museum on the banks of the Brisbane River. The Gala Dinner proved to be a particularly enjoyable night, with a captivating performance by a dance and quick change act, followed by a six piece band which ensured the dance floor was never empty.

Destination

Feedback from delegates on the destination was very favourable with climate clearly a highlight as well as proximity to world class resort areas and places of visitor interest. One of the major drawcards was the presence of a number of major cultural attractions within a few minutes walk of the Convention Centre. ASSSI chose Brisbane based on a number of factors. One was the relative strength of the local branch of the Society but the others included confidence in the venue and the city as a attractive place for overseas delegates.

Brisbane's accommodation and transport infrastructure did a great job of taking care of delegates' needs with many commenting on the accessibility of Brisbane and the ease with which international visitors were able to find their way around the city. Brisbane was referred to as "this lovely city" at the Congress final session - reinforcing the decision to base the Australian Congress here. In addition, the Congress organised day excursions just before and just after the week of science sessions - ferrying people throughout south-east Queensland with both a scientific and sightseeing aim. A large number of delegates were able to develop a feel for this part of the world.

Challenges

Large scale international conferences always involve major changes, many of which relate to scheduling. With more than 2000 oral and poster submissions, making sure everything went to plan was a challenge. According to Ashley Gordon from Carillon Conference Management, a fully interactive web based submission and speaker management system, combined with splendid work on the part of the Scientific Program Committee and Carillon's program services delivery, dealt with these issues and combined to produce a World Soil Congress program with an exceptionally low rate of absent presenters.

Outcomes and Legacies

The science progress announced at the Congress covered a broad range of areas. Notable advances included new understanding of the processes needed for a new 'green revolution', substantial progress in understanding soil carbon and its roles in greenhouse gas mitigation and sequestration, remarkable new insights into soil biology and soil biological function (probably a field of study making the strongest advances), new studies on the importance of soil and soil health for social stability, the latest understanding of the management of nitrogen and phosphorus needs as these essential nutrients become more scarce and a revitalised interest in the frozen soils of the world and their complex role in climate change and adaptation.

Environmental Initiatives

From the very beginning, Congress organisers implemented a sustainability policy which was designed to minimise environmental impacts of the event. All administrative correspondence was electronic including the paper submission process. Congress proceedings were produced on DVD format and hard copy production was largely limited to the congress handbook. All papers are freely available on www.iuss.org

Student Reports

Symposium: CS7 Soil Carbon Sequestration

By: Luke Spencer (The University of Sydney)

Carbon: Panacea or Poisoned chalice?

Wading through the science and rhetoric of Carbon Sequestration on Agricultural Soils a symposium entitled Soil carbon sequestration at the 19th World Congress of Soil Science in Brisbane, Australia certainly helped clarify the science currently underway by presenting some of the latest research and thinking surrounding this most important issue. One presentation "Capturing Carbon in Australian Soils: potential and realities" by Jeff Baldock was particularly pertinent given the amount of information being published on carbon (approx. 4,000 scientific article last in 2009). The need to address greenhouse gas emissions (GHG), primarily atmospheric CO_2 levels and the subsequent climate change associated with it has thankfully moved beyond the debate of whether the phenomena actually exists. Discussion now centres on the appropriate technologies that will address the most significant challenge of our time. This article introduces the issue of carbon sequestration as it relates to agricultural soils and attempts to dispel some of the myths surrounding the contribution soils can make to this modern day dilemma.

Where is it coming from?

The argument on climate change can be cleanly split into two camps, Emissions and Sequestration. Emissions generally relate to the release of CO_2 and other GHG's to the atmosphere from the burning of fossil fuels (primarily coal and oil). Atmospheric levels of CO_2 have risen by 32% since 1750, and contribute 6.3 billion tonnes annually.

Where can it go?

Sequestration of carbon involves the capturing of atmospheric CO_2 and subsequent storage. The primary pools of absorption are oceanic, biotic (trees, grass etc) and soils. The soil carbon pool represents 2,500 Pg (billion tonnes) of this global pool and therefore holds enormous potential.

Figure 1. Is agriculture evolving with the times?

The role of Agriculture

Agricultural soils are present across a vast percentage of the terrestrial portion of the earth, and have contributed to atmospheric CO_2 levels through poor land management practices such as clearing, cultivation and the addition of fertilisers. The depletion of soil carbon (oxidation) has not only contributed to atmospheric CO_2 but also lead to the general decline in soil quality.

Therefore efforts to increase soil organic carbon (SOC) levels can contribute the following benefits to agriculture:

- Increased water holding capacity
- Improved nutrient holding through increased Cation exchange capacity
- Soil structural improvements
- pH buffering

Research in the area of carbon sequestration has highlighted that increasing SOC can be achieved through:

- Converting cropping land to pastures,
- Introducing minimal or conservation tillage techniques,
- Eliminating stubble burning,
- Cover cropping and introducing legume species in crop rotations,
- Introducing legume species into pasture phases,
- Improved nutrient management,
- Afforestation and reforestation.

Figure 2. Converting to perennial pastures: one of the many tools.

How well does it work?

One of the major points to emphasis is that carbon sequestration is very much site specific being influenced largely by soil type and climatic conditions (primarily rainfall). It is also driven by human factors such as access to capital, landholder attitudes, management flexibility and willingness to change.

Issues

Laboratory techniques have evolved to allow a very high degree of certainty of actual carbon levels in a given sample. However the question surrounds spatial variance. High spatial variability refers to the amount of difference over a particular area, and is a major concern for verifying soil carbon content. Soil carbon levels can vary greatly across a relatively short distance, even within soil classifications, presenting further challenges to determining carbon levels. To improve accuracy increased sampling is required, bringing with it cost issues. Advances in techniques such as infield Vis-NIR equipment (www.veristech.com) and GIS mapping systems are helping to address these issues. Another major area of concern is that of Permanence, which relates to the expected timeframe that sequestered carbon will remain in the soil. If a farmer modifies practices and to improve soil carbon levels, how long is that additional carbon expected to stay "locked up" in the soil.

Implementation

This brings up the inevitable question of "a price for Carbon". Prominent researchers are reluctant to openly state their position however hesitate a conservative estimate of $250/t. Other industry figures consider $40/t a realistic figure. This large discrepancy highlights the amount of work ahead. It is interesting to note that Article 3.4 of the Kyoto Protocol does not include carbon sequestration in agricultural soils, however does state "it is a possible item for future inclusion". This further complicates any negotiations and decisions farmers may make to sequester carbon. Carbon will invariably go down the path of becoming a commodity, trading like wheat, corn or even metals, the difference being that we're paying someone to produce something and leave it locked up in the soil, a strange situation that many struggle with.

The majority of current debate centres on the price of carbon, however, it is more appropriate to talk in terms of cost. Conversion of farm land to pastures may lead to reduced income due to loss of subsequent crops; or converting to minimal tillage practices may require significant capital investment by the farmer. This raises the fiercely contested question of payment. Should payments take the form of tax credits, government rebates, or emissions trading?

It seems the road to agreement will be long (given the inaction by government in recent months) and require the input of all interest groups including farmers. Farmers are notorious "price takers", so it is essential that the process of determining any price for carbon involve strong representation by agricultural practitioners. More so that any other industry, the farming community have been exposed to countless attempts by unscrupulous entrepreneurs (aka Snake oil salesmen) selling products or services that purport to "double your yield", "triple your margins" and "slash your fertiliser bill".

This has never been more evident than with carbon sequestration on agricultural soils. It is without question that the science community, including soil scientists, ecologists, agricultural scientists, researchers, universities, extension agencies and alike have an obligation to provide the critical information that empowers farmers so that "*the wool is not pulled over anyone's eyes".*

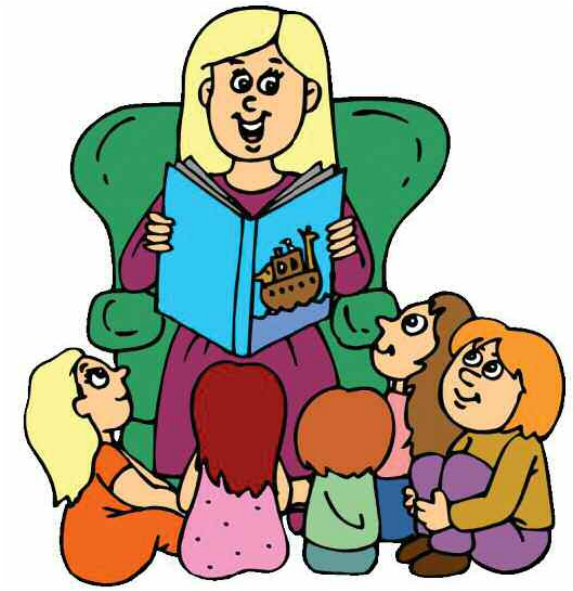
Education and the transfer of knowledge are critical in dispelling the myths that surround such a vital issue. This also stands as a clarion call to farmers to not just stand idle waiting for that information, move aside the "us and then" mentality and engage with the people that know. Don't leave it to resellers to tell you what to do, be analytical and question ***why*** more often.

It should be clearly stated that building soil carbon levels is certainly beneficial to soils and can even boost productivity in many situations; however, it is not the panacea that everyone is looking for. It can certainly help and be part of the "carbon tool kit" that will contribute collectively to addressing the biggest challenge of the 21st century …….and possibly many centuries to come.

Soil classification - benefits and constraints to pedology

Symposium presenters – Pavel Krasinikov, David Rees, Catherine Fox, Rosa Maria Poch

By: Natalie Kempers (The University of Sydney)



A long long time ago the sleepy minds of fathers, brothers, sisters and mothers were stirring. Life was good. Land was being cultivated, food abounded and the population was expanding. Satisfied with the state of affairs people were content...perhaps too content. Life was going well but why? Curiosity after all is one of humanity's strongest driving forces which cause us to seek beyond our own knowledge and to expand our minds. Why did some crops grow better in some areas and not in others? What was the soil beneath our feet? How can we classify and identify different soils based on properties such as yield and colour? In parts of Egypt land became known as Kemet meaning fertile black alluvial soils, and areas were named Deshret meaning red desert land. In Ancient China 2500 y.b.p a book was made to classify three categories and nine classes of soil. Soil science was being born. The 16th century saw a leap forward in soil science as soil surveys were beginning to be carried out by the Russians. This was achieved by asking peasants about the productivity of their land. It was not until the 19th century in Europe and the USA that lab and field analysis was carried out for classifying soils.

Jumping to present times, the evolution of soil classification has seen a lack of practicability, such as transmitting knowledge of nutrient availability and hydrological features which are important for practical users of soil classification such as farmers in agriculture. Promising research by Catherine Fox in Canada has lead to the development of A horizon protocols. These protocols involve a characterisation key using subscript lettering to convey properties of the A horizon. Incorporating these into soil analysis, changes in soil properties can be tracked as land use changes. Four levels are identified including genetic processes and impacts from anthropological activities, primary structure, organic matter content (%) and pH (0.01MCaCl$_2$).

Although this system requires additional analysis of soils its use simply builds on current soil classification systems as it communicates properties of the A horizon. This does not alter soils' classifications. This is a problem which has developed over the years as various soil classification systems have developed with different names and terminology. This has been to the detriment of universal communication between soil scientists. To amend the current confusion there is work under way to convert current soil classifications from differnet backgrounds into globally used classification such as the World Reference Base (WRB). Examples of this include studies on the Sodosols of Australia and the Eurobaz soils of Hungary as well as the updating of old soil maps, again by using the WRB soil classification.

A review and evaluation of available data on soils was conducted on the western slope of la Reunion Island due to assessments on the ground water vulnerability. Old French classification maps were determined not to be utilisable as the classification systems was no longer used and lacked georeferenced data. A new soil survey was conducted which identified 30 types of soils according to the WRB classification.

Adding to the streamlining of soil classification is the incorporation of global soil classification into current soil surveying. The masses of trees in the forests of Keroudkenar watershed are classified in categories of soils as follow Entisols, Inceptisols, Mollisols and Alfisols and nine subgroups: Lithic Vermudolls, In-

ceptic Hapludoalfs, Typic Dystrudepts, Typic Hapludalfs, Lithic Udorthents, Inceptic Haplorendolls, Typic Paleudalfs, Humic Dystrudepts, and Typic Udorthents

Additionally, pedological processes have been suggested for use in viticultural zoning in Catalonia, Spain. It was identified that soil forming processes influence soil classification and properties which are used in determining management of vineyards to achieve specific grape quality. From this it was suggested that pedogenesis be used in viticultural zoning. Micromorphological identified argilluviation as a process influencing available water capacity and cation exchange capacity. Secondary carbonates were being formed by soil forming processes. The accumulation of these carbonates could influence vine health due to iron induced chlorosis. This affects management decisions such as the planting of resistant root stocks. Roots may also have difficulty in penetrating cemented layers where calcium has accumulated. An increase in the coarse fraction due to calcification affects available water capacity.

Eurobaz is a soil type in Hungary which develops on volcanic lithology. The name is reflective of it constituents being the amalgamation of eruptive and basic. This soil type is widely neglected in terms of studies being conducted on it. A study was conducted into whether or not this soil type can be classified as an Andosol in the WRB classification system. Lab analysis determined that the Eurobaz and Andosols share similar features in structure, humus content, colour and mineral composition. However Eurobaz do not contain andic or vitric horizon – diagnostic criteria for Andosols. A mollic horizon suggested that the Eurobaz could be classified as a Leptosol, Luvisol, Cambisol or in the Phaeozem group. Analysis of each of these soil groups determined that Eurobaz could not be classified into any particular WRB soil type.

The work on the soils of Hungary has highlighted the complexities with which the soil science community face in developing a new classification system for global use. Convergence and divergence in the evolution of soils and the naming of different soil types in different classification with similar/same names causes much confusion. Adding to the confusion is the apparent need for trace element characterisation of soils outside of global classification schemes which are said to be inadequate in conveying trace element information in soils. Three trace element keys have been suggested by Denis Baize which include the geochemical background, soil processes leading to natural pedogeochemical concentration (NPGC) and contamination induce by man.

With the development of digital mapping and the usefulness of "mathematical ad-hoc classifications" it is possible and plausible that the need of soil classificaiton has become redundant. However if soil classification is to remain, a Universal Soil Classification System "should be accepted". This classification needs to be simple, flexible, and universal and have clear terminology and functionality. Our happily ever after awaits us.

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Symposium 4.2.1 Soil, Energy and Food Security at the Congress of Soil

List of oral presenters: Declan McDonald, Angela Clough, Eric Craswell, Alfred Hartemink, Robert White

By Kimberly Lam (The University of Sydney)

This is a poem about food, energy and soil,
it was a symposium theme at the World Congress of Soil*.
The soil is the foundation in which all things are based,
and so my dear readers this is the case.
For food it was about security and how much there is left,
for energy it's about resource allocation and whether it's theft.
Presented were five speakers from places like China,
In addition to dozens of posters that made it non-minor.
The people from Brazil were concerned about cane,
the sugar I mean, and global dominance they will gain.
The crop that they value ravages the ground,
for the need of machinery to recover the pounds.
It is the farmers that grow the crop for the yield,
with sustainability and soil health that does not appeal.
They fear the monoculture,
as these canes can become vultures.
According to Clough that issue comes second,
when time and cost are a beckons.
For the hydrocarbon substitute that questions the source,
is this the best use of our soil without any remorse?
Millions of people continuing to suffer,
as their living conditions continue to get tougher.
It is harder to grow food from a source that's depleting,
and all over the news it's what everyone's repeating.
For China and India with their population so high,
their diets will change to proteins beyond supply.
Modellers such as Ye paint a picture that is unfortunate and bleak,
by 2050 23% deficit in food we will now have to seek.
What is identified is the correlation that's lacking,
the link between food security and soil health without that much backing.
In White's study of support tools - GIS is the way of the future,
to accurately measure the carbon and the nitrogen capture.
With savings in money due to less nitrogen fertiliser,
It seems only with time stakeholders will get wiser.
There needs to be work on increasing the yields,
but also consideration for the space of the fields.
Scandrett has said these agricultural fields they call sinks,
doesn't have the solution for carbon as we all might think.

** 19th World Congress of Soil Science 'Solutions for a changing world' Brisbane, Australia 1-6 August 2010.*

And Bindraban wrote it's the 'Epidermis of the Earth',
but it seems to be everyone's piece of turf.
Other papers presented were about crop rotations and weeds,
what is apparent is the irrelevance to needs.
McDonald hints towards a national policy of action,
unfortunately for him there is only reaction.
With our growing population,
this is the situation
For many of the parameters require site only specifics,
deter the big players from committing to targets that might be horrific.
What was lacking in the solutions was clear,
the tools for national action was absent from fear.
How does a soil scientist talk to the world,
about a problem that gets worse, as it unfurls?

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Council Meetings Minutes (Abridged)

World Congress of Soil Sciences, Brisbane

Council Meetings, chaired by the President, Roger Swift, with 47 Member Countries represented, three representatives of the Honorary Members and the Executive Committee met 5 times during the Congress. There was lively and active discussion on a range of topics during these meetings.

Some of the key activities during the meeting of Council were:

1. Reports from IUSS Officers including Division Chairs covering the previous year and in some cases an overview since the last Council Meeting were received and commented upon by members of Council.
2. A report of the financial position of the Union and the impact of the global financial problems on our investment income was outlined by the Treasurer Jim Gauld. The Audited Accounts for 2009 were presented. The accounts were approved and the report of the Budget and Finance Committee accepted.
3. In response to the Budget and Finance Committee Report it was noted that the contribution to IUSS would forthwith broadly reflect the number of members rather than the previously very generous contribution in excess of $50000, a figure which has been sustained for the last 8 years. The reduction in the contribution from the USA would be between $14000 and $18000. The USA were thanked for sustaining this most generous level of support during the early years of the new IUSS structure. It was noted that if all National Members fully reported their National Membership of Soil Scientist and paid subscriptions on these figures the reduction in subscription income as a result of the change in USA policy would probably be met.
4. The recommendation of Budget and Finance Committee that from 2012 the rates for membership would be : Group I $7.75 per member; Group II $4.65 per member and Group III $1.55 per member was accepted
5. Revised Bye-Laws were approved by Council.
6. The winners of the IUSS Medals and Prizes were reported and congratulated:-

Dokuchaev Medal and Prize – Dan Yaalon
Liebig Medal and Prize – Don Sparks,

7. Following presentations and a vote Council decided that the World Congress of Soil Sciences in 2018 will be held in Rio de Janeiro, Brazil.
8. Following from discussion at the Council Meeting in 2008 a formal proposal was presented to separate the Presidency of IUSS from the hosting of the World Congress. From 2014 it is proposed that IUSS will have an elected President who will serve for a term of 2 years. The Chair of the Organising Committee for the World Congress will be the Vice President Congress. Nominations for the President will be called for in 2011 with an election during 2011-12. This proposal was accepted.
9. Commission 3.6 Salt Affected Soils was established from the very active Working Group of the same name. New Officers of the Commission will be elected at the next elections in 2011-12.
10. Three new Working Groups were established: Universal Soil Classification; Soil Monitoring; and Soil Information Standards.
11. China, India, Italy, Switzerland and the United Kingdom indicated their interests in hosting the WCSS in 2022.
12. Paul Bertsch on behalf of the USA presented a proposal for IUSS to be actively involved in activities to develop and establish a protocols for the validation and verification of carbon sequestration in soil systems. In the first instance this would be by means of a workshop when current knowledge from the global soil science community on verification systems was shared and strategies for standardising them discussed.
13. Council appointed new Chairs of Standing Committees :-

Awards and Prizes – Mary Beth Kirkham
Budget and Finance – Stephen Nortcliff
Statutes and Structures – Don Sparks
Presidential Elections – Roger Sparks.

Suggestions were also made of possible members of these Standing Committees, but nominations were welcome.

14. The outgoing Chairs of the Standing Committees; Awards and Prizes – Winfried Blum; Budget and Finance – Robin Harris; Statutes and Structures – John Kimble were thanked by the Council. Special thanks went to John Kimble who had over the last 14 or 15 years, as part of a small team, developed from scratch the IUSS Statutes and Bye-Laws and then as Chair of the Standing Committee endeavoured to revise them in the light of their use and application.
15. The President thanked all those who had contributed to the support of IUSS over the time of his Presidency.
16. Following the end of my term of office as Secretary General in December 2010, it is very pleasing to record that Council resolved to appoint Alfred Hartemink as Secretary General and Alex McBratney as Deputy Secretary General from January 1 2011.

Stephen Nortcliff
Reading, September 2010

New IUSS Officers

President
Jae yang

Professor of Soil Environmental Chemistry, Dean of College of Agriculture and Life Sciences, Director of Agricultural Experimental Station, Kangwon National University, 192-1 Hyoja 2 Dong, Chunchon, Korea 200-701, e-mail: yangjay@kangwon.ac.kr

Dr. Yang has been professor of soil environmental chemistry since 1990 at Kangwon National University, Korea. At present, he serves as the Dean of College of Agriculture and Life Sciences and Director of Agricultural Experimental Station. He received the Ph.D. degree from Montana State University, USA in 1987 and had postdoctoral experiences in USA and Canada until 1990. His current researches focus on biogeochemical processes that affect contaminant bioavailability and risks in the soil-water-crop continuum, development of new methods to evaluate soil chemical processes that control bioavailability of nutrients and contaminants, and remediation of the contaminated soil and water by *in situ* immobilization/solidification methods with the beneficial use of organic and inorganic by-products. He has drawn about 90 research grants and advised more than 60 graduate students. Dr. Yang published more than 180 peer reviewed research papers, +300 abstracts at domestic and international meetings, coauthored 20 books or chapters and registered more than 10 patents. Dr. Yang has demonstrated his leaderships in teaching, research and administration with experiencing Dean, Vice-Dean, Director of Agricultural Research Institute and Director of the national strategic education project of well-being agriculture. He has served on a number of national policy and research committees, the councils of scientific societies and the editorial boards of several journals. Professor Yang feels that the field of soil science is expanding because of the growing interests in food security and safety as well as environmental quality. In addition, many state-of-the-art emerging technologies being developed in other disciplines are waiting for soil scientists to use for education and researches. Thus, IUSS should widen her roles in promoting food production, conserving environment and developing education strategy on the world wide scenes. As an IUSS president, he will devote himself to serve the global soil science communities and to promote the IUSS activities with developing various strategies with John Kim (Vice President), Alfred Hartemink (IUSS SG), Alex McBratney (IUSS Deputy SG), executive and council members and all of IUSS members in order to fulfill the objectives and commitments of IUSS.

Vice-President
Kye-Hoon John Kim

Professor of Soil Science, Dept. of Environmental Horticulture, The University of Seoul, Junnong Dong, Seoul, Korea 130-743, e-mail: johnkim@uos.ac.kr

Dr. Kye-Hoon John Kim earned his BS and MS in Agricultural Chemistry at Seoul National University in Korea, and a Ph.D. in Agronomy majoring in soil conservation at the University of Georgia at Athens, Georgia in USA. He worked for two years at the Oak Ridge National Laboratory as a postdoctoral research fellow dealing with soils contaminated with radioactive materials. His six year's work for the Korea Institute of Nuclear Safety (KINS) as a senior researcher, especially participation of the joint expedition to the radioactive waste dumping areas in the northwest Pacific Ocean, significantly influenced his interests in environmental issues. Later, he joined the University of Seoul as a Professor of Soil Science in 1997 and has worked extensively in issues related with remediation of contaminated soils since then. He was a visiting scholar at the Integrated Waste Management Centre, Cranfield University, UK in 2005. His current research interests and projects are in: remediation of contaminated soils in the urban areas; contaminated soil management within the risk assessment framework; recycling of by-product gypsum, especially in agriculture; phytoremediation of the contaminated soils; development of growing substrates for specific crops; standardization

L to R: Alex McBratney, Kye-Hoon John Kim, Jae Yang, Alfred Hartemink

of methods of soil analysis; and environmentally-safe burial of animal carcasses to prevent epidemics. He was a chair of commission 3.4 Soil Engineering and Technology during 2006-2010 and will serve another term, 2010-2014, as a chair of the commission. He also has been an active participant to working group SUITMA (soils of urban, industrial, traffic, military and mining area) of IUSS since 2003. Dr. Kim has been involved in standardization of methods of soil analysis by working with ISO (international standardization organization) as a national representative of Korea since 2003. He is currently working as a convenor of ISO/TC 190/SC 7/WG 9 since 2008. He eagerly looks forward to working with his colleague Prof. Jae E. Yang and other members of the IUSS Executive to encourage stronger involvement of young soil scientists and the soil scientists from the developing countries to the 20th WCSS particularly through the development of the Scientific Program of the Congress.

Secretary General Alfred Hartemink

ISRIC – World Soil Information, PO Box 353, 6700 AJ Wageningen, the Netherlands. E-mail: alfred.hartemink@wur.nl

Alfred Hartemink is a soil scientist at ISRIC – World Soil Information in Wageningen, the Netherlands. He has worked as soil surveyor and soil fertility specialist in Congo, Kenya, Tanzania, Indonesia, Papua New Guinea and Australia. He coordinates the *GlobalSoilMap.net* project that works on a fine resolution digital soil map of the world. Alfred was the Deputy Secretary General of the International Union of Soil Sciences (2002-2010); he is joint editor-in-chief of *Geoderma* and *Progress in Soil Science,* and editor of the *World Soils Book Series*.

Deputy Secretary General Alex McBratney

Professor of Soil Scienc, Faculty of Agriculture, Food & Natural Resources, Rm. S224 John Woolley Building, The University of Sydney NSW 2006. Australia. E-mail: Alex.McBratney@sydney.edu.au

Alex. McBratney is Professor of Soil Science and Pro-Dean in the Faculty of Agriculture, Food & Natural Resources at the University of Sydney. Alex. is a soil teacher and researcher. He teaches general soil science, soil physics and pedometrics. His main research interests are in pedometrics and precision agriculture. His pedometric research is now largely focused on digital soil mapping at various resolutions and spatio-temporal variation of soil carbon. He collaborates widely both formally and informally with colleagues across the globe. Alex. is a strong advocate for the generation of novel and authentic soil science knowledge (that addresses real-world problems) and its wide promulgation in the scientific and lay media.

Division and Commission Officers 2010-2014

(short biography of all officers is on www.iuss.org under IUSS People)

Division One – Soil in Space and Time

Division Chair		K. Stahr, Germany	k.stahr@uni-hohenheim.de
1.1	Soil Morphology and Micromorphology		
	Chair	R.M. Poch, Spain	rosa.poch@macs.udl.cat
	Vice Chair	M. Gerard, France	Martine.Gerard@impmc.jussieu.fr
1.2	Soil Geography		
	Chair	R. Jahn, Germany	reinhold.jahn@landw.uni-halle.de
	Vice Chair	A. Faz Cano, Spain	angel.fazcano@upct.es
1.3	Soil Genesis		
	Chair	G.L. Zhang, China	glzhang@issas.ac.cn
	Vice-Chair	Z. Zagorski, Poland	zagorski@delta.sggw.waw.pl
1.4	Soil Classification		
	Chair	J. Galbraith, USA	ttef@vt.edu
	Vice Chair	P. Kravilnikov, Russia	pavel.krasilnikov@gmail.com
1.5	Pedometrics		
	Chair	T. Behrens, Germany	thorsten.behrens@uni-tuebingen.de
	Vice-Chair	A-Xing Zhu, USA	azhu@wisc.edu
1.6	Palaeopedology		
	Chair	D. Sauer, Germany	d-sauer@uni-hohenheim.de
	Vice-Chair	S. Sedov, Mexico	sergey@geologia.unam.mx

Division Two – Properties and Processes

Division Chair		M. Gerzabek, Austria	martin.gerzabek@boku.ac.at
2.1	Soil Physics		
	Chair	D. Or, Switzerland	dani.or@env.ethz.ch
	Vice Chair	Bin Zhang, China	bzhang@issas.ac.cn
2.2	Soil Chemistry		
	Chair	J. Chorover, USA	chorover@cals.arizona.edu
	Vice-Chair	T. Miano, Italy	miano@agr.uniba.it
2.3	Soil Biology		
	Chair	K. Inubushi, Japan	inubushi@faculty.chiba-u.ac.jp
	Vice Chair	F. Kandeler, Germany	ellen.kandeler@uni-hohenheim.de
2.4	Soil Mineralogy		
	Chair	D. Hesterberg, USA	dean_hesterberg@ncsu.edu
	Vice-Chair	B. Singh, Australia	balwant.singh@sydney.edu.au
2.5	Soil Interfacial Reactions		
	Chair	A. Violante, Italy	violante@unina.it
	Vice-Chair	S. Staunton, France	staunton@ensam.inra.fr

Division Three – Soil Use and Management

Division Chair		R. Horn, Germany	rhorn@soils.uni-kiel.de
3.1	Soil Evaluation and Land Use Planning		
	Chair	S. Mantel, Netherlands	Stephan.Mantel@wur.nl
	Vice Chair	G. Toth, Hungary	gergely.toth@jrc.it
3.2	Soil and Water Conservation		
	Chair	E. Cammeraat, Netherlands	L.H.Cammeraat@uva.nl
	Vice-Chair	B. Lennartz, Germany	bernd.lennartz@uni-rostock.de
3.3	Soil Fertility and Plant Nutrition		
	Chair	A. Garcia-Ocampo, Colombia	sccsueloagarcia@uniweb.net.co
	Vice Chair	B. Singh, India	BijaySingh20@hotmail.com
3.4	Soil Engineering and Technology		
	Chair	John Kim Key-Hoon, Korea	johnkim@uos.ac.kr
	Vice-Chair	S. Melchior, Germany	melchior@mplusw.de
3.5	Soil degradation control, remediation, reclamation		
	Chair	P. Gicheru, Kenya	cdnarl@iconnect.co.ke
	Vice-Chair	T. Kosaki, Japan	kosakit@kais.kyoto-u.ac.jp
3.6	Salt-Affected Soils		
	Chair	D. Suarez	Donald.Suarez@ars.usda.gov
	Vice-Chair	T. Toth	tibor.toth@jrc.ec.europa.eu

Division Four - The Role of Soils in Sustaining Society & the Environment

Division Chair		C. Rice, USA	cwrice@ksu.edu
4.1	Soils and the Environment		
	Chair	M. Aulakh, India	msaulakh@satyam.net.in
	Vice chair	I. Vogeler, New Zealand	ivogeler@hortresearch.co.nz
4.2	Soils, Food Security and Human Health		
	Chair	I. Pepper, USA	ipepper@ag.arizona.edu
	Vice-Chair	Yong-Guan Zhu, China	ygzhu@rcees.ac.cn
4.3	Soils and Land Use Change		
	Chair	R. Hatano, Japan	hatano@chem.agr.hokudai.ac.jp
	Vice Chair	M.H. Roozitalab, Iran	roozitalab@dpimail.net
4.4	Soil Education and Public Awareness		
	Chair	S. Cattle Australia	s.cattle@usyd.edu.au
	Vice-Chair	Wang Jinggou, China	wangjg@cau.edu.cn
4.5	History, Philosophy and Sociology of Soil Science		
	Chair	J. Churchman, Australia	jock.churchman@adelaide.edu.au
	Vice-Chair	E. Landa, USA	erlanda@usgs.gov

IUSS von Liebig Award 2010: Don Sparks

Don Sparks at the conference dinner in Brisbane.

Donald L. Sparks was born in Paris, Kentucky in 1953. He gained his PhD at Virginia Polytechnic Institute and State University at Blacksburg, Virginia in 1979. He has spent his entire professional career at the University of Delaware, being appointed a full Professor in 1987. In 2002 he was appointed to the S. Hallock du Pont Chair at the University of Delaware. Don Sparks has published over 250 papers and book chapters and three textbooks in the area of soil and environmental chemistry. He has also edited Advances in Agronomy for almost two decades. He has been a visiting researcher at Universities and Institutes throughout the USA and World. He is a Fellow of five scientific organizations, was President of the Soil Science Society of America in 1999-200 and President of the International Union of Soil Sciences 2002-2006.

IUSS Dokuchaev Award 2010: Dan Yaalon

Dan Yaalon.

His granddaughter at the conference dinner in Brisbane.

Dan Yaalon was born in the former Czechoslovakia in 1924. He studied at the Agricultural Universities of Copenhagen and Uppsala. In 1948 he became a citizen of the new state of Israel and in 1954 completed his doctorate in Soil Science at the Hebrew University in Jerusalem. Since this time he has taught and undertaken research at Institutes and Universities around the world, including Rothamsted Experimental Station, University of California, University of Oxford, and the Australian National University in Canberra. He has made very significant contributions to advancing the scientific knowledge of soils and sediments in aridic environments and was a lead player in establishing the modern pedological foundation of soil interpretation and research. In later years he has focused his attention on the roles played by humans in inducing changes in soils and soil behaviour. In addition within ISSS and IUSS Dan has taken a significant role in encouraging and developing the history of the soil science.

New Honorary Members IUSS

Christian Feller

Dr Christian Feller was born on the 2nd of June, 1943. He obtained a PhD in organic chemistry in 1972, and a French State PhD (the highest degree in the French University system) in soil science in 1994. He is presently a Director of Research and a senior soil scientist at the "Institut de Recherche pour le Développement" (IRD-France), and the IRD representative for Madagascar. He worked in numerous places in the world such as Senegal, France, the West Indies, Brazil, and Madagascar.
The main research topic of Christian Feller has always been soil organic matter. Indeed, he is one of the major pioneers in this field. Christian Feller made a major breakthrough in soil organic matter characterisation when he proposed in 1979 an original method for separating soil organic matter pools using a physical fractionation (Feller 1979). Several decades after his proposal, physical fractionation of organic matter is still one of the main tools used by soils scientists to separate soil organic matter pools.
In 1985, he was the co-author of the first paper using in situ ^{13}C natural isotope labelling for the study of organic matter dynamics after a land use change. This new and powerful discovery has thereafter been used by hundreds of soil scientists to quantify soil organic carbon pools from different origins. Moreover, the combination of the two techniques first proposed by Christian Feller brought sound insights into the concepts of carbon pools and carbon dynamics. His findings brought about tremendous changes to soil organic matter dynamics modelling and to the understanding of the functional properties of soil organic matter pools and components.
Christian Feller anticipated very soon the importance of the issue of soil carbon sequestration in global changes. His first studies on carbon stocks and fluxes according to management practices were realised before the Kyoto protocol. Using his large knowledge of tropical soils and organic matter dynamics, he was able to propose simple generic methods to estimate C contents of tropical soils, their potential changes, and the degradation risks linked to soil organic matter decrease (*e.g.*, Feller &

Kikuo Kumazawa

Prof. Dr. Kikuo Kumazawa is a Professor Emeritus, Department of Agricultural Chemistry, Faculty of Agriculture, the University of Tokyo, Japan. He earned his PhD from the University of Tokyo in 1961 and has served as an assistant professor, associate professor and professor of plant nutrition and fertilizers is the Faculty of Agriculture, the University of Tokyo from 1953 to 1989, and then he taught in Tokyo University of Agriculture from 1989 to 1999. He worked as a second officer in IAEA from 1968 to 1969.
He has devoted of teaching and research experience in plant nutrition and fertilizers over 50 years. He studied on the role of organic acid metabolism in rice roots. Then he developed the emission spectrometry of ^{15}N analysis of small amount of samples at the level of microgram. This method and ^{15}N analyzer have been widely used in many laboratories in Japan and all over the world to study the fate of N in plant and soils. He applied this ^{15}N tracer method in nitrogen assimilation in rice roots and nitrogen fixation in soybean nodules. He discovered that ammonium, either in the rice roots or soybean root nodules, is initially assimilated in amide-N of glutamine via GS/GOGAT pathway by ^{15}N tracer experiments. He also analyzed N sources in natural and agricultural fields using natural abundance of ^{15}N. He gave a great effort to promote recycling of waste organic matter to agriculture for sustainable and environmental friendly agriculture.
He served as President of the Japanese Society of Soil Science and Plant Nutrition, President of Association of Japanese Agricultural Scientific Societies, President of the Japan Organic Recycle Association, President of the Japan Soil Association, and President of the Fertilization Research Institute. He was governing board Member of ICRISAT (1982-1988) and of IBSRAM (1988-1994). He has published a substantial number of books, research papers and reports.

Kazutake Kyuma

Professor Dr. Kazutake Kyuma is Professor Emeritus, Faculty of Agriculture, Kyoto University, Japan. He was granted Doctor of Agriculture from Kyoto

University in 1961 and served as an assistant professor, associate professor, and professor in the Faculty of Agriculture and the Center for Southeast Asian Studies, Kyoto University, from 1960 through 1994 and as a professor in the School of Environmental Science, the University of Shiga Prefecture, Japan, from 1994 through 2001. He was also engaged in research as a visiting scientist in North Carolina State University, USA, from 1963 through 1964 and taught as a visiting professor in Kasetsert University, Thailand, from 2002 through 2004.
He devoted himself for nearly 50 years to research and education in soil science, particularly in the fields of soil genesis and classification, soil fertility evaluation, nutrient cycling in soil ecosystems, and the establishment of sustainable agriculture under different environmental conditions in the world. Among many of his study topics, "fertility evaluation of lowland soils in Tropical Asia" and "ecosystem study of shifting cultivation in Monsoon Asia" can be recognized as milestone research in the development of agricultural sciences in the tropics and contributed to understanding soils, agriculture, peoples, history, culture and philosophy of that area.
Professor Kazutake Kyuma served as President of the Japanese Society of Soil Science and Plant Nutrition (1990-1991), President of the Japanese Society of Pedology (1986-1990), President of East and Southeast Federation of Soil Science Societies (1990-1991), a member of Board of Trustees in International Rice Research Institute (1989-1992), Vice-chairman of Soil Genesis and Classification Division in International Society of Soil Science (1986-1990), Chairman of the Program Committee of the 14th International Congress of Soil Science (1986-1990), and a member of Editorial Board of *Geoderma* (1989-2001). He received Japanese Agricultural Science Award (1985), Award of Japanese Society of Soil Science and Plant Nutrition (1975), Award of Japanese Society for Tropical Agriculture (1978) and became the first winner of East and Southeast Asian Federation of Soil Science Societies Award (2007). He was also honored with Purple Ribbon Medal (1994) and Cordon of the Order of the Sacred Treasure (2002) of the Government of Japan for his dedication to research and education in soil science, particularly those for the development of the countries in the tropics.
Professor Kazutake Kyuma has published numerous books, research papers and reports.

John Ryan

Dr John Ryan's contributions to global soil science are reflected by:
Publications related to soil fertility, plant nutrition, soil conservation, and agricultural education: 155+ refereed journal articles, 48 proceedings articles, 13 books, 20 book chapters, 4 training manuals, 23 internally reviewed publications, 170 meeting abstracts, and 30 special reports. Furthermore there are now Arabic, Russian and English language versions of his *Soil Laboratory Manual.*
International recognition as a Fellow of Soil Science Society of America (1999), Fellow of the American Society of Agronomy (1998), being awarded a DSc from University College Dublin (1999), an International Soil Science Award (1997), an International Service in Agronomy Award (2004) the J. Benton Jones Award (2007) and a "Distinguished Citizen of the University of Arizona" award (2000). His career achievements have also been recognized by the presentation of the Soil Science Distinguished Service Award, presented in New Orleans on November 5, 2007 at the SSSA-ASA-CSSA meeting.
Editorial board member for the following journals: European J. Agronomy; Nutrient Cycling in Agroecosystems; and Renewable Agriculture and Food Systems; Turkish J Agriculture and Forestry; Ethiopian Journal of Natural Resources; Iranian Journal Science and Technology; and Al-Awamia).
International committee membership for the following: Scientific Advisory Committee of the World Phosphate Institute; International Crop Science Committee: Committee for the International Soil Science Award; Committee for the International Service in Agronomy Award; currently serves on the Committee for Fellows of the American Soil Science Society; and is Chair of the L.B. Frederick Travel Grant Committee.
Dr. Ryan has contributed to the IUSS in the following ways:
He was elected Chair of Commission 3.3 (Soil Fertility and Plant Nutrition) in 2002.
He was one of a number of international soil scientists to contribute to the IUSS publication (2006) on "The Future of Soil Science".

B. A. Stewart

Dr. Stewart is currently Distinguished Professor of Soil Science and Director of the Dryland Agriculture Institute at West Texas A&M University in Canyon,

Texas. He received his B.Sc. (1953) and M.Sc. (1957) from Oklahoma State University and his Ph.D. (1961) from Colorado State University. Before joining West Texas A&M in 1993, Dr. Stewart had a 40-year career with the U.S. Department of Agriculture (USDA), serving as a Research Soil Scientists with the Agricultural Research Service, and later also a Laboratory Director at the Conservation and Production Research Laboratory in Bushland, Texas.

Dr. Stewart is a Fellow of the Soil Science Society of America (SSSA), the American Society of Agronomy (ASA), and the Soil Conservation Society of America. He has served on the Board of Directors of both SSSA and ASA, and was President of SSSA in 1981. He has also served as the Associate Editor (1967-72) and Editor-in-Chief (1975-79) of the SSSA Journal. Within the International Soil Science Society, Dr. Stewart attended several congresses, participated in the 1966 meeting of Commission IV, and was Vice-Chairman of the Soil Conservation Sub-Commission from 1990 to 1994.

In addition to his participation in ISSS, Dr. Stewart has other international activities to his credit. From 1983 to 1993, he served as Scientific Liaison Officer for the U.S. Agency for International Development to the International Center for Agriculture Research in Dryland Areas, Aleppo, Syria. For the Food and Agriculture Organization and the World Bank he has conducted special assignments and written reports on Dryland Agriculture. For example, World Bank Technical Paper Number 221 was published in December 1993 entitled Conserving Soil Moisture and Fertility in the Warm Seasonally Dry Tropics. This report was based one that he coordinated and wrote for The World Bank in 1992-1993. In February 1995, Dr. Stewart chaired a four-person committee for an internal review of the Farm Resources Management Program at the International Center for Agricultural Research in Dryland Areas (ICARDA), located in Aleppo, Syria.

Dr. Stewart has been the impetus behind several international conferences and workshops focusing on Dryland Agriculture. He conceived of the idea and served as Chairman of the Organizing Committee for the 1988 International Conference on Dryland Farming, held in Amarillo and Bushland, Texas, and was attended by 450 participants from 52 countries. As Director of the Dryland Agriculture Institute, West Texas A&M University, he developed a Training Workshop on Sustainable Agroecosystems and Environmental Issues. The first Workshop was in 1994 and it has been held annually. More than 100 participants from Thailand, China, Senegal, Ethiopia, Argentina, Pakistan, Jordan, Mexico, Uganda, Mali, Brazil, Australia, South Africa, Yemen, and India have been involved.

In December 1994, he participated in an Electronic-Mail "Conference on Management of Salt-Affected Soils" sponsored by the Centre for Environment for the Arab Region and Europe for representatives of the Ministries of Environment, Ministries of Agriculture, and universities in Egypt, United Arab Emirates, Tunisia, Syria, Jordan, and Libya. In May 1996, he was an invited lecturer to the XV Argentine Soil Science Congress, Santa Rosa, Argentina, and in December 1997 he was invited to present a paper at Belem, Brazil.

Among the awards Dr. Stewart has received are the 1985 USDA Superior Service Award and the 1994 Hugh Hammond Bennett Award, the highest award given by the Soil and Water Conservation Society. From 1991-93, Dr. Stewart served on the National Research Council Committee on Long-Range Soil and Water Conservation, which resulted in the National Academy of Sciences report, *Soil and Water Quality: An Agenda for Agriculture*.

Victor Targulian

Prof. V.Targulian was born in Russia, Moscow, on August 10, 1934 and received his Master in Soil Science at the Moscow Agricultural Academy in 1957 and became Doctor of Geographical Sciences, Soil Formation and Weathering in 1968 at the Institute of Geography of the Russian Academy of Sciences. From 1965 – 1972 he was Senior Researcher at the Institute of Geography of the Russian Academy of Sciences, and from 1972 – 1993 Head of the Laboratory of Soil Geography and Evolution. Since 1993 he has been Leading Researcher at the Institute of Geography, Russian Academy of Sciences.

Since 1988 he has been Professor of Soil Genesis and Geography at the Lomonosov Moscow State University. From 1975 until today, he has been visiting professor and researcher at many institutions in Europe, Asia and the Americas: Visiting Researcher at the Institute of Environmental Engineering of the Polish Academy of Sciences; Visiting Researcher at the Poushkarov Soil Science Institute in Sofia, Bulgaria; Visiting Professor at the Earth Science Department of the Hebrew University, Jerusalem, Israel; Visiting Professor at the Ohio State University, Columbus, and the Laboratory of

Soil Survey in Washington D.C.; Visiting Professor at the Laboratory of Geosciences and Environment, University of Marseille III, France; Visiting Professor at the Institute of Soil Science of the Chinese Academy of Sciences in Nanjing, China; Visiting Professor at the Institute of Geology, UNAM, Mexico City, Mexico; Visiting Professor at the Agricultural University in Hohenheim, Stuttgart, Germany; and Visiting Professor at the University of Natural Resources and Applied Life Sciences (BOKU), Vienna, Austria.

Prof. Targulian served on many international scientific programmes and projects, as chairman and leading scientist, e.g. in the MaB-UNESCO Programme, in the IGBP – Global Change Co-ordinating Panel "Atmospheric aspects of hydrological cycles".

His services and co-operation in the national and international soil scientific community are numerous: At national level, he has been a member of the Presidium of the Russian Soil Science Society (Dokuchaev Society) since 1974. Since 1990 he has been Vice President of the Dokuchaev Soil Science Society of Russia, responsible for international relations of the Society with the international soil scientific community.

Professor Targulian has held a number of posts within ISSS-IUSS:

1990 – 1994 Vice Chairman of Commission V "Soil Genesis, Classification and Cartography"; 1994-1998, Chairman of Commission V, 1998 – 2002, Vice Chairman of Commission V; 2002 – 2006, Chairman of Commission 1.3 "Soil Genesis" within Division I "Soil in Space and Time".

Prof. Targulian is author of more than 350 scientific publications, among them 7 books, 15 book editions, about 120 scientific papers in peer reviewed journals and more than 230 further papers as book chapters and technical papers. He has given more than 200 invited lectures and more than 250 other presentations in national and international scientific events. His latest book was published in 2008, written together with S.V. Goryachkin, on "Soil Memory: Soil as a Memory of Biosphere-Geosphere Interactions" (in Russian).

Prof. Targulian has received several prizes and awards: He is Honorary Member of the Polish Soil Science Society; he received the Dokuchaev Memorial Medal of the Russian Soil Science Society in 1996 and was honored with the Dokuchaev Award of IUSS in 2006.

György Várallyay

Professor György Várallyay, honorary president of the Hungarian Soil Science Society, and member of the Hungarian Academy of Sciences (HAS) has significantly contributed to the development of soil science and the activities of the International Union of Soil Sciences.

Professor Varallyay has contributed to the understanding of the salinization, alkalization, and sodification processes. Beside fundamental research he organized and performed several national and international courses on the topic. As Vice President (1978-1982) and later President (1982-1986) of Commission VI, Soil Technology, he took an active part in organization scientific meetings and activities.

- Research, teaching and leadership of scientific activities on soil degradation processes, environmental sensitivity/vulnerability and mapping/monitoring soils.

Professor Varallyay participated in and coordinated several national and international programs related to land degradation (GLASOD, Digital Soil Data Base of Europe, CE-SOTER. etc) He took the leadership in the development of the Hungarian Soil Monitoring System (TIM), that is among the best performing examples for other countries, and was the early initiator of harmonized European and global soil monitoring systems. He organized several meeting in the area under the umbrella of IUSS and introduced the new findings into education programs.

- Contribution to science policy and institutional development of scientific organizations:

In his past positions and functions as director of Research Institute for Soil Science and Agricultural Chemistry of HAS, the president of the Hungarian Soil Science Society and member of the Scientific Committee of European Soil Bureau (ESB) (only the most important are mentioned) he significantly contributed to the development of the national and European soil science and soil protection policy. He has also been serving as a member of the Committee on Prizes and Awards and President of the Hungarian National Committee of IUSS.

His scientific recognition is well expressed by his membership in international organizations and editorial boards of several journals which are listed along with his many awards in the detailed curriculum vita of Professor Varallyay (attached). The most important ones are:

- President (1993-) of the HAS Scientific Commission on „Soil Science and Agrochemistry”; Honorary President of the Hungarian Soil Science Society; Member of the Scientific Committee of European Soil Bureau (ESB);Member of the Hungarian National Committees of UNESCO, ICSU, MAB, IGBP, NHP, ICID, CIGR and ISTRO;
-Editor-in-Chief of „Agrokémia és Talajtan” (Agrochemistry and Soil Science), Member of the international editorial boards of „Archiv für Acker- und Pflanzenbau und Bodenkunde”; „Geoderma”; „International Agrophysics”; „Land Degradation and Development” and „Matica Srpska”;
-„Order of Merit of the Hungarian Republic, Commander's Cross” - President of the Hungarian Republic, 1997; „Order of Work” (silver) - President of State, 1985; „Doctor Honoris Causa” of 3 Hungarian Universities, Foreign Member of the Slovak Academy of Agricultural Science, Medal „Michal Oczapowski” – Section of Agriculture and Forestry Sciences of the Polish Academy of Sciences, 1991.

J.S.P. Yadav

Born on July 30, 1922, Dr. J.S.P. Yadav had very brilliant academic career throughout, and also obtained Post Graduate Diploma in Forest Soils from Oxford University, U.K. Dr. Yadav has long distinguished experience of research, teaching and administration in the capacity of Soil Chemist and Senior Research Officer (Soils), Forest Research Institute, Dehradun (1956-69), Project Coordinator of All India Coordinated multi-disciplinary project on Soil Salinity and Water Management (1969-74), Director Central Soil Salinity Research Institute (CSSRI), Karnal (1974-82), Vice Chancellor Haryana Agricultural University, Hisar (1982-83) and Chairman Agricultural Scientists Recruitment Board (1983-86). Following his retirement, Dr. Yadav served USAID, India, New Delhi as Senior Programme Specialist/Project Officer (1987-91).

Dr. Yadav is widely recognized for his outstanding contributions on soil and water management, leading to efficient and economic use of these two key resources which are basic to robust agricultural growth and sustainable socio-economic development. As Coordinator, Dr. Yadav steered, guided and evaluated successfully research at several locations representing different agro-ecological situations of India. Very valuable scientific information of vast practical applicability emerged regarding water requirement of different crops, irrigations methods, introduction of IW/CPE ratio concept for scheduling irrigation, identification of critical growth stages of crops, drainage needs for different soils and other related aspects aiming at higher productivity without ecological harm. Tolerance limits of major crops for salinity/sodicity of water were determined, and management practices refined for safe use of such waters for increased crop production. Our research findings have shown that waters having higher Mg/Ca ratio impaired soil physical condition by increased degree of dispersion and decreased hydraulic conductivity as well as the crop yield. It was inferred that under such condition, Mg acts like Na rather than Ca, and hence, Mg should not be clubbed with Ca for calculating SAR values. Extensive occurrence of salt-affected soils presents a serious constraint to crop production in India, especially in the Indian Gangetic Plain. Techniques were standardized for proper characterization and diagnosis of these soils. Our research work (1956) showed that pH 8.2 instead of pH 8.5 denoted ESP 15 for distinguishing the sodic soils. Based on an intensive investigation, a salinity and alkali scale was prepared in 1956 to evaluate these soils for crop responses. This scale has proved of immense practical value for adopting appropriate management practices for crops like rice, wheat, sorghum and barley. Detailed study (1959) was conducted to assess the dynamics of soil changes taking place during reclamation. In an Operational Research Project undertaken in seven villages of Karnal district under his guidance, lush green crops of rice and wheat were grown with adoption of CSSRI technology on a number of farmers' fields of highly deteriorated barren sodic lands. These and other efforts prompted the governments of Punjab, Haryana and Uttar Pradesh to reclaim more than 1 million ha of sodic lands in these states with additional production of about 6-8 Mt of foodgrains every year.

The research initiated by Dr Yadav in 1970 after establishment of CSSRI on afforestation of sodic land helped rehabilitation of these problematic areas through agroforestry / social forestry. Voluminous data were generated to define the soil properties responsible for good or poor growth or even motality of forest species. The publication of Dr. Yadav on 'Problems and Potentials of Reforestation of Salt-affected Soils in India' brought out in 1988 by FAO Regional Office Bangkok, has received wide recognition.

As Director CSSRI, Dr. Yadav organized an International Symposium on the Salt-affected Soils at Karnal in 1980, which was attended by more than 100

eminent scientists from 26 countries. The quality of research achievements presented by the scientists of CSSRI not only earned honours in their professional career but also placed CSSRI on the global map. Prior to this international event, Dr. Yadav organized an Indo-Hungarian Seminar on the salt-affected soils in 1977. The remarkable success of these two events still remains a historic record of CSSRI Karnal.

Dr. Yadav participated in 11th International Congress of Soil Science in 1978 in Canada, and 12th International Congress of Soil Science in 1982 at New Delhi. Besides, he participated in International Conference on Casuarina in 1981 in Australia; International Seminar on Scientific Agricultural Management in 1984 in Sri Lanka; First National Congress of Soil Science in 1985 at Lahore in Pakistan; FAO World Food Day Symposium on Environmental Problems in Bangkok in 1989; International Seminar on Soil Resilience and Sustainable Land use in 1992 at Budapest; International Rice Conference in 1995 at IARI; and International Symposium on 'Sustainable Management of Salt-affected Soils in Arid Ecosystem in 1997 at Cairo under aegis of Sub Commission "Salt Affected Soils" of the IUSS. Dr. Yadav has been Vice Chairman, Commission VI and Sub Commission on Salt Affected Soils of IUSS. Besides, he has been chairman/member of several professional/scientific committees, panels and meetings at State, National and International level. He is Editor of National Academy Agricultural Sciences. Dr. Yadav has, to his credit, more than 250 publications including research papers in foreign and Indian journals of repute, scientific reviews, books, bulletins, chapters popular articles etc. The book co-authored on 'Saline and Alkali Soils of India' (1979) is still in
great demand.

In view of his outstanding contributions, Dr. Yadav was conferred PADMA SHRI by the Govt. of India. He is also recipient, singly or jointly, of other important awards namely Guinness Award of Commonwealth Scientific Association, Hari Om Trust Award, Dr. Rajendra Prasad award, Brandis Memorial prize, Schlich Memorial Prize, Honorary Member and Golden Jubilee honour of Indian Society of Soil Science, USAID Award for Superior Performance, Samaj Gaurav Samman National Award, All India Pensioners Appreciation for meritorious service in ICAR, and D.Sc. (h.c.) by GBPUAT, Pantnagar. Dr Yadav has been Fellow of National Academy of Sciences, India; Chemical Society, London; National Academy of Agricultural Sciences; Indian Society of Agricultural Chemists; Indian Society of Coastal Agricultural Research; Indian Society of Water Management, and Soil Conservation Society of India. Dr. Yadav has been President of Indian Society of Soil Science, Agricultural Society of India, Indian Society of Coastal Agricultural Research, Indian Society of Salinity Research Scientists, and Indian Society of Water Management. He has visited several countries and has been expert consultant to FAO, USAID, World Bank, UN-ESCAP, UNDP, AFC, WAPCOS, PPCL and United Rice Land Ltd.

Dr Yadav passed away on 3rd April 2010.

In Memoriam
Dr. Dominique Righi (1943-2010)

D. Righi, research scientist at HydrASA CNRS - University of Poitiers, passed away in the evening on March 7. He was born on 1943, January 19th at La Rochelle where he grew up, then married Annick and had two children, Quantin and Nicolas. He was graduated in agricultural science and he got his PhD in 1977 and started working at the 'Laboratoire de Pédologie' of the University of Poitiers with professor Jacques Dupuis. During the nineties, this laboratory evolved to a composite research team focussed on clay minerals. This was especially important for him because he could deeply interact with other scientists having a very different background and aims. In that context he was capable to create a very fruitful interaction contributing in importing and exporting data, methodologies and approaches between the clay mineralogy and the soil science communities.

The basics of his approach embrace two point of reference: a multi-facets studying of soil (fine) clay aiming to understand soils and the use of soil forming factors sequences. Indeed Dominique gave an enormous importance in analysing the soil system by employing chrono-, topo- and lito-sequences concepts as a mean of disentangling and understanding the soil complexity. Then the analysis of such complexity was challenged by integrating soil morphology with chemical, spectroscopic and ultramicroscopic approaches of clay minerals.

In the first part of his carrier Dominique became a leading scientist on podzol and podzolization processes. Then as his carrier moved towards the study of clay minerals he became a leading international authority on soil clay mineralogy and its relationship with soil type and soil morphology. He produces outstanding results concerning clay formation during podzol development. On Swiss soils, he was able to highlight phyllosilicates evolution by linking geology, time and soil horizonation proving that smectite is the end-product of mica alteration in strongly leached and acidified E horizons. He also demonstrated that the end-products of the weathering processes in either the A or the Bw horizons appeared to be quite different. More recently he established that eluvial pedogenic smectites of Finnish podzols change over time with soil evolution, in terms of clay assemblage, chemistry and interlayer charge. Dominique gave an outstanding contribution by studying factor time of pedogenesis

throughout the rate of clay minerals change (smectite + mica = illite + mixed-layer minerals) in a chronosequence of polders where the progress of reaction in time appeared to be non-linear. His cutting-edge research has also advanced the world's knowledge on the evolution of clay minerals in Vertisols. He proved the pedogenic formation of new clay minerals in toposequences of Vertisols in accordance to soil horizons and environmental settings. For instance, he demonstrated the neogenesis of kaolinite-smectite mixed layers in toposequences developed from basaltic parent material (Italy) and related this finding to the drainage conditions induced by the slope, demonstrating that the pedogenic formation of high-charge beidellite are in connection with the unstability of montmorillonitic layers in subalkaline soil environment. Then his findings largely dismantled classical pedological theories concerning whole soil homogeneization and montmorillonite stability in Vertisols. He has also given important contribution in understanding the importance of expandable phyllosilicate in the clay fraction for explaining organic matter complexes resistant to oxidation, in reviewing halloysite formation in soils, demonstrating the role of fulvic and humic acids in Oxisol-Spodosol toposequence (Brazil) and finally showing examples of the effect of agricultural activities on the mineralogy of soil clays. He has also pioneered some important methodologies in soils including high-gradient magnetic separation techniques, the estimate of layer charge of smectites using infrared spectroscopy and, most importantly, the pioneer soil science applications of XRD patterns decomposition. To this respect he definitively proved that the decomposition of XRD patterns gave realistic data, after having directly measured clay crystals size on HRTEM images. Moreover he proved the important influence of microsystems on clay mineralogy by analysing weathering sequences of rock-forming minerals in serpentinite and basalt.

Dominique has successfully trained and inspired more than 20 PhD and MSc students and postdoctoral fellows, and hosted numerous international visiting scientists.

Dominique was the head of HydrASA laboratory during the 2002-06 period. He has served on numerous national and international scientific and academic committees. He also has served in the Editorial Board of Clay Minerals and as referee for many international Soil Science and Clay Science journals.

Dominique was an eminent scientist, a great educator, appreciated teacher and passionate soil scientist. He was indeed a man combining the rigour of his research activities with humbleness, kindness and deep understanding of human being regardless whether students, young scientists, technicians or senior colleagues. He had a passion for soil science and most of his students and colleagues have been affected by this passion producing a decisive influence on their careers.

Thank you, Dominique, from your friends and colleagues.

IUSS Alerts May - October 2010

International Union of Soil Sciences

Information for and from the global soil science community

IUSS Alerts are e-mailed to more than 12, 000 people in over 100 countries. If you have information to share, please send it to alfred.hartemink@wur.nl Below are the still relevant contributions that appeared in the IUSS Alerts between May and October 2010.

IUSS at LinkedIn

LinkedIn is a business-oriented social networking site. LinkedIn had more than 65 million registered users, spanning more than 200 countries. The site is available in English, French, German, Italian, Portuguese and Spanish. The purpose of the site is to allow registered users to maintain a list of contact details of people they know and trust in their profession. The people in the list are called Connections. Users can invite anyone (whether a site user or not) to become a connection. This list of connections can then be used in a number of ways: A contact network is built up consisting of their direct connections, and the connections of each of their connections. It can then be used to find jobs, people and business opportunities recommended by someone in one's contact network. Employers can list jobs and search for potential candidates. Job seekers can review the profile of hiring managers and discover which of their existing contacts can introduce them. Users can post their own photos and view photos of others to aid in identification. The IUSS has LinkedIn group where Discussion, Jobs, New etc can be posted. More info www.linkedin.com

Newsletter on Soil Morphology & Micromorphology

The most recent Newsletter from Commission 1.1 Soil Morphology & Micromorphology is now available on the IUSS website. This volume of the Newsletter includes a tribute to Dr. Maria Gerasimova, several reports on workshops, spectacular microscopic images, and the winners of the 2010 Young Micromorphologist's Publication Award are announced. Information is provided about a new intensive training course on soil micromorphology and a new book "Interpretation of Micromorphological Features of Soils and Regoliths" will be available August 2010. To learn more, see this and all previous newsletters go to: www.loess.umcs.lublin.pl/micro.htm

African soil profile data wanted!

Soil profile data are needed for producing digital soil maps of Sub Sahara Africa. The Africa Soil Information Service (AfSIS) project is producing digital soil maps, predicting soil property values, and uncertainty, for 2.2 billion grid cells applying approaches and standards that are compliant with the *GlobalSoilMap.net* initiative. The principal outcome of the project will be a Globally integrated Africa Soil Information Service, serving soil information that permits underpinning of policy- and decision making, and monitoring, at local, national and global scales. ISRIC - World Soil Information is collecting and compiling existing soil profile data, from any source, and the global soil science community is invited to contribute with soil data. The data are captured and harmonized under a common standard. If you can contribute data holdings, either digital datasets or paper reports, please contact: johan.leenaars@wur.nl

New WRB homepage at FAO

The World Reference Base for Soil Resources / WRB (the soil correlation system of the IUSS) has a new homepage at the FAO site: www.fao.org/nr/land/soils/soil/en/ It informs about all publications based on the second edition of WRB (2006). Especially important are: 1. the latest revised version (first update 2007), 2. the

translations (up till now: Arabic, Spanish, German, Polish, Russian), 3. the newsletters, 4. the "Guidelines for constructing small-scale map legends using the WRB". Originally designed for classifying pedons, with these Guidelines WRB can also be used for map legends (at least for scales 1 : 250 000 and smaller).

Hot in climate research?

The 2009 United Nations Summit on Climate Change, which attracted more than 100 world leaders, is only one recent manifestation of the growing international concern over human impact on climate. The political and economic implications of the topic, of course, are vast. *Science Watch* confines itself to assessing the body of research. To examine highly cited research on climate change over the last decade, *Science Watch* turned to a special extraction of Thomson Reuters-indexed literature, based on such keywords as "global warming," "climate change," "human impact," and other pertinent terms, in journal articles published and cited between 1999 and the spring of 2009. This search produced upwards of 28,000 papers. From this set, *Science Watch* identified the most-cited institutions, authors, and journals. Read the full article and analysis http://sciencewatch.com/ana/fea/09novdecFea/

All papers now online

The conference proceedings from the 19th World Congress of Soil Science held in August in Brisbane are now online available at www.iuss.org The papers can be browsed by Symposia or searched by First Author or the Title of the Paper. Each paper is available as PDF and the Information for Readers includes recommendations how the papers should be cited. Also the Congress Handbook is available as PDF. The papers were edited by R.J. Gilkes and N. Prakongkep.

Directory of Geoscience Organizations of the World

The Geological Survey Planning and Coordinating Office of the Geological Survey of Japan National Institute of Advanced Industrial Science and Technology (AIST) has produced a Directory of Geoscience Organizations of the World. Although much information can be obtained instantly through the internet today, this directory includes major government/quasi-government organizations throughout the world and is a handy reference. The Geological Survey of Japan, AIST compiles and publishes both paper-based and digitized version of the directory for convenience of those who are concerned with earth sciences. The directory is available as html and PDF:
www.gsj.jp/Intl/index-e.htm

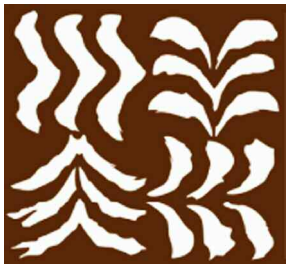
Quoting the soil

"The soil itself must be the object of observation and experiment and the facts obtained must be soil facts before they can be incorporated into soil science. The science of zoology was developed through the study of animals, that of botany through the study of plants, and soil science must be developed through the study of the soil." by C. F. Marbut (1920). "Ancient poetry and mythology suggest, at least, that husbandry was once a sacred art; but it is pursued with irreverent haste and heedlessness by us, our object being to have large farms and large crops merely. We have no festival, nor procession, nor ceremony, not excepting our cattle-shows and so-called Thanksgivings, by which the farmer expresses a sense of the sacredness of his calling, or is reminded of its sacred origin. It is the premium and the feast which tempt him. He sacrifices not to Ceres and the Terrestrial Jove, but to the infernal Plutus rather. By avarice and selfishness, and a grovelling habit, from which none of us is free, of regarding the soil as property, or the means of acquiring property chiefly, the landscape is deformed, husbandry is degraded with us, and the farmer leads the meanest of lives. He knows Nature but as a robber" From *Walden* (1854) by Henry David Thoreau. And many more soil quotes at wikiquote http://en.wikiquote.org/wiki/Soil

Soils in Italy

On www.soilmaps.it you can find the kml files of the Italian soil regions, soil systems and pedosites (soils of national cultural heritage). Just click on the related item of the news box in the home page of soilmaps, Google will allow you to see or download the geography and the attributes of the maps. The information comes from a collaborative project involving all soil regional services of Italy, named "Badasuoli" (soil database of Italy). Badasuoli stores more than 44,000 pedons, classified both according to Soil taxonomy (2003) and World Reference Base (1998).

The 20th World Congress of Soil Science



It is great privilege for Korean Society of Soil Science and Fertilizer (KSSSF) to host the next 20th World Congress of Soil Science (WCSS) which will be held in International Convention Center of Jeju (ICC Jeju), Jeju Island, KOREA, in June 8-13, 2014.

Jeju Island, area of 1,950m^2 and population of a half million, locates at the southernmost of South Korea and lies equidistant among South Korea, China and Japan. The Island is an extinct volcano with its peak jutting skyward at the center and a broad, gentle littoral all the way around forming a very unique geographical condition. In June of 2007, the volcanic Island and lava tube cave systems were designated as UNESCO World Natural Heritage Sites for their natural beauty and geographical values.

Jeju has subtropical climate with four distinct seasons. Average temperature of June is 22°C. Jeju has a rich and unique island cultures that attract tourists worldwide. Jeju Island is thus not only Korea's most prestigious resort destination but has been the venue for several political joint summit talks and other major international meetings. It is only an hour flight from Seoul and also connected to major international airport hubs.

The ICC Jeju, spreading over an area of more than 5,000 m^2 and artfully merging the blessed tourist resources around, is the world-top resort style convention center with fully equipped for international meetings of any scales. One of the advantages for IUSS is that the 7 storied building is in whole reserved for the 20th WCSS which allows the organizing committee to plan a various functional activities. The ICC Jeju located within the Jungmun resort complex where participants can have a variety of experiences such as botanical garden, museums, temples, deluxe hotels, golf course, beach, waterfall, and basalt pillars, etc. It extends to the cobalt-blue Northern Pacific stretching to the south and towering Mt. Halla commanding the north. More information on Jeju Island and ICC Jeju can be obtained at http://www.iccjeju.co.kr/eng/.

The overall components of the 20th WCSS logo, giving out a scent of the orient, are rectangle to reflect soils and agricultural fields. Four trigrams depict the agricultural ecosystem and vital activities occurring inside such as plants, river, rolling hills and contour, etc.; the live organisms in soil such as earthworms, grub and roots, etc.; and major practices such as strip-crops, plowing, windrows and erosion gullies, etc. There is a unity between them through form of shape and style and they sit in harmony. In addition, the four trigrams represent the four divisions of IUSS. The logo is a montage of soils embracing life and environment.

We have formulated the organizing committee of which the structure is similar to those of 18th and 19th WCSS. The KSSSF is responsible for organizing the 20th WCSS with assistances from governments, companies and sponsors. We are very grateful to our colleagues in the USA and Australia who have kindly provided a large amount of information arising from the organization and running of the 18th and 19th WCSS. A number of field tours will be organized covering a range of geographical regions in Korea, China and Japan with a unique oriental mode.

The website for the next congress (www.20wcss.org) is opened as starting and will be updated to provide the forum to cover all aspects of the Congress. The Congress information will also be posted through the IUSS Bulletin and Alerts.

The IUSS Inter-Congress Council meeting will be held in ICC Jeju in early June of 2012 and the details will be posted in IUSS Bulletin and Alerts.

We will do our best in making the 20th WCSS to be an excellent opportunity to get on top of the changes in soil science and to envision new perspectives for basic and applied soil researches. The Organizing Committee is planning to set up the various programs to encourage the participation of many soil scientists from every corners of the world. Beautiful Jeju Island and warm hospitality of Koreans will make the next congress a wonderful experience. We look forward to seeing you in KOREA in 2014!

Jae Yang
IUSS President
yangjay@kangwon.ac.kr

5 questions to a soil scientist

5 questions to Jan Mulder

Position: Professor of Soil Science (since 1998)
Age: 54
Address: Dept. Plant & Environmental Sciences, Norwegian Univ. Life Sciences
E-mail: jan.mulder@umb.no

1. When did you decide to study soil science?
During my first year at Wageningen university; partly based on recommendations from older students. I also selected this study, because I was fascinated by soils and soil processes and their importance for environmental challenges.

2. Who has been your most influential teacher?
Most influential has been my main supervisor during my PhD (Prof. Nico van Breemen); Creative, and stimulating. Curiosity-driven research.

3. What do you find most exciting about soil science?
Understanding soils and soil processes has to build on an integration of elements of biology, chemistry, physics and geosciences. Often exciting new insights are developed at the interface of different disciplines (for example, the current research on biochar, but many other examples could be mentioned here). It is also exciting that soils are important reactors with respect to global change processes (climate change, land-use change, changes in the global nitrogen cycle). Thus a sound understanding of soils is crucial for society and its development.

4. How would you stimulate teenagers and young graduates to study soil science?
Show how understanding of soils is important for society. Environmental change affects soils, but soils and soil processes also modify the environment. Besides their importance for environmental science, soils and soil management are also crucial for sustainable production of food.

5. How do you see the future of soil science?
Soils are at the heart of many of society's challenges, and there is a great need for recruitment. The future for soil science is bright!

5 questions to Jean Paul Legros

Position: President of French Soil Science Association – AFES (2009-2010)
Age: 67
Address: 1 bis rue de Verdun, 34000 Montpellier, France
E-mail: afsol.legros@orange.fr

1. When did you decide to study soil science?
When I began in agronomy in a specialized school, I was interested by all the subjects. So, I believed that it would be logical to study first the soil, then the plant, then the food transformation, and finally the market. Being 67 years old, I have not already dominated the first step (soil); it is a little too late to begin with the other ones.

2. Who has been your most influential teacher?
Professor Emmanuel Servat (Montpellier). He had not the best character and was not the more famous French professor that were in this old time Philippe Duchaufour and Jean Boulaine. But when Servat explained in his lectures the nature of podzols or chernozems he gave the desire to work in pedology to a lot of students.

3. What do you find most exciting about soil science?
Pedogenesis because it allows us to dream and to

tackle the infinity, in the big dimension because some soils are several millions years old and also in the smallest dimension if you consider that a particle of clay has a structure as beautiful as diamond but much more complicated and interesting.

4. How would you stimulate teenagers and young graduates to study soil science?
I try to explain that soil is the real center of the world in term of biodiversity, food supply, Culture (archeology), etc.

5. How do you see the future of soil science?
After three or four technological decades in which men tried to make abstraction of Nature with the help of machines and the use of too much simplified economical rules, I see that new views are emerging that takes care of environment. In such a context I am sure that soil science will be more and more recognized as important. Finally, I am very optimist for the future of our discipline. But we have to seize the opportunity and to prove each day its practical utility for everybody.

5 questions to Allan Hewitt

Position: Research Leader
Age: Mature, active, moderately weathered, partly eluviated, 0.06 ka
Address: Landcare Research PO Box 40, Lincoln, New Zealand
E-mail: hewitta@landcareresearch.co.nz

1. When did you decide to study soil science?
Childhood curiosity about a brilliant red-coloured road cutting near my family farm made me aware of earth materials. I completed undergraduate study in chemistry and geology and worked as an exploration geologist, sampling soils for copper and tungsten content. I realized that I was more interested in the soils themselves than just the metal contents of the samples. Thoughts for the future harked back to that cutting. I had to know more about what that was. The threads of curiosity and accumulating knowledge all came together when I studied soil science, in a post-grad diploma, at Lincoln University, NZ. There was a feeling of homecoming.

2. Who has been your most influential teacher?
I have been fortunate to have several enthusiastic teachers. Two that stand out are Prof's Armand Van Wambeke, and Marlin Cline, of Cornel U who gave the vital ingredient of one-on-one discussion which imparted and sharpened. Like others who have been a great influence, these two taught from the authority of long experience. Various supervisors and colleagues in my work have also been inspiring teachers.

3. What do you find most exciting about soil science?
The greatest excitement for me is to understand how a landscape works, and to capture some expression of its orderliness. The exploration of planet earth is not complete, and in 2010 we can still discover, characterize, and name new soils. We can take part in fundamental discovery armed with just a spade and auger. It is a unique experience to arrive in a fresh landscape and gather clues about its genesis, and patterns of soils, and then to extend that understanding to make inferences about its management potential and risks. Another buzz for me is to work closely as part of a project team where great ideas arise out of group interactions. This is only too rare and needs to be nurtured.

4. How would you stimulate teenagers and young graduates to study soil science?
This question is relates back to question 1. If we were to survey "why we studied soil science" for a large sample of soil scientists we may discover some common paths that might be used or adapted.

Because my path was curiosity, then I would naturally wish to stimulate curiosity in the young. For the very young it would be to dig and delve – to search for the curious. For older more aware students the hook would be landscapes – to discover the natural order and think about why, how, and its significance for people. The mystery needs to be posed then unveiled by observation. Wouldn't it be marvelous if the power of the gaming industry could be harnessed to pose the mystery. The technology is available to produce dynamic 4D visualizations of how

landscapes evolve and work, at multiple scales. Enthusiasm is best caught from people but gaming media could stimulate the initial curiosity.
Deep thought needs to be given to identifying what is cool about soils! Biologists have the cute and cuddly; geologists have dinosaurs and volcanoes. What does soil science have? Pin-up soils? Soil art is a start but needs to reach a larger audience. Soil science needs to engage the advertising industry. Give them a break, provide for them something really good to promote.

5. How do you see the future of soil science?
If humans enjoy a good future on earth then part of the reason will be because they have gained a new regard for the underpinning soil. The future of soil science is tied to the future of people on this crowded planet. Imagine a world where people understand soil – not just the specialists but the public, officials, and businesses. Soil is popular. "Dirt" is no longer a synonym for unhealthy. The idea of soil as natural capital becomes embedded in the public and economic mind. Land use is configured to take best advantage of this natural capital, and all the soil services it supports are monitored and managed, not just the economically convenient ones. Intergenerational equity is a working principle and we understand resilience and how to manage it. Capital withdrawals from the soil are rebuilt where possible by recycled waste streams. Less of the earth's resources are devoted to frippery and more to substance.
We must communicate our ideas in new ways far beyond our inner circles. They may be idealistic but without something to aim for we are destined to just hug the bottom line of expediency.

5 questions to Zueng-Sang Chen

Position: Distinguished Professor of pedology and soil environmental quality, and Associate Dean of College of Bioresources and Agriculture, National Taiwan University (since August, 2007)
Age: 58
Address: Department of Agricultural Chemistry, National Taiwan University. 1, Sect. 4th, Roosevelt Rd., Taipei 10617, Taiwan
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1. When did you decide to study soil science?
While I was taking the course on "Soil morphology, genesis and soil classification" at the PhD program of Department of Agricultural Chemistry, National Taiwan University in 1980, I did a summer project to make a soil survey and soil mapping in the hill land of Eastern Taiwan, I do understand the meaning of soil function in different landscapes and watersheds. I continued making the soil survey and studies on the forest soils of coniferous vegetation in Taiwan for next years, it promoted my interesting on the field of pedology and forest ecosystem.

2. Who has been your most influential teacher?
In 1986, I met Dr. Hari Eswaran, Director of Soil Management Support Service (SMSS) of USAID at that time, who gave me the opportunity to attend an intensive training course on the soil morphology and classification in the Philippines. After that, he always give me many ideas and experience on how to study the soil genesis and how to solve the problems on soil classification. He and I joined together about 10 times on the international workshops to attend the field study tours for more than 300 soil pedons located at the Asian countries, Canada and United Sates during 1986-2000. The most influential concept from him on pedology is how to make an interpretation, prediction and assessment on the soil

formation, soil function and soil quality under landscape and also how to protect the soil resources to avoid the land degradation.

3. What do you find most exciting about soil science?
As we know, soil is a natural body and a complicated system which we can observe and make a model prediction at different scales. In an agricultural ecosystem, we can predict and understand the nutrient dynamics and cycling by a monitoring project and a simulation model under landscape or watershed scale. I have involved in some projects related to agricultural production in watershed scale or natural forest ecosystem to monitoring the nutrient budget and dynamics in Taiwan. What most exciting me is how to make a good prediction and to make a sustainable soil and nutrient management strategies in a watershed scale. The other exciting thing for me is by using the soil amendment materials or phytoremediation technique to clean up the metals-contaminated soils to recover the soil function. The techniques of biogeochemical process need more efforts by combined monitoring data, soil survey report and developing models for a better understand on the dynamics of nutrient or pollutants in soil system in the future.

4. How would you stimulate teenagers and young graduates to study soil science?
I try to show something for them. The first one is to create soil museum in the land which they can see and touch during some student activities in the university campus or we try to make a demonstration of different soil monoliths in the extension center of agricultural experimental station. We have prepared more than 200 soil monoliths for their visiting. The second one is to organize the field study tour for them by auger to find the secret by observing the soil morphology during they study in the landscape. The third one is to show the different CD-ROM including soil profile pictures of the major soil groups or soil order of the world and also including soil profile pictures collected from different soil monolith centers established in Taiwan, Japan, Thailand, Vietnam, New Zealand, and China. I find that they are very enjoyable to see these pictures as a computer game they like.

5. How do you see the future of soil science?
Everybody knows that soil resource is the most important and should be protected. We must develop some strategies and technologies to avoid the soil degradation for the sustainable agriculture. Some government agencies of the Asia countries have this policy to produce healthy and safety agricultural products by maintain the good soil and water quality, including the budget and technologies for protection and remediation the degraded soils. We are afraid of some soil scientists have shifted to the field on environmental sciences, not only for the interesting to study new fields related to soil, crop and environmental quality, but also for the requirement of budget. The older soil scientists have the challenge to compete with the senior scientists by learning more new knowledge to maintain their performance activities in the future.

Favourite Soil Science Books

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Two of my three favourite soil science books are well-thumbed textbooks found in my office (or usually sitting on the desks of colleagues). The other book is popular nonfiction that is not a soil science book *per se* but a very influential recent advocate of our discipline.

Mitchell, J.K., and K. Soga. 2005 Fundamentals of soil behavior 3rd ed John Wiley & Sons, Hoboken, NJ. ISBN 13: 978-0-471-46302-7

This is a gem of a textbook aimed at geotechnical engineers but arguably the most valuable reference available to anyone interested in the mechanical behaviour of soils. The first few chapters appreciate how the formation of soil underlies its complexity. Topics such as biological influence on soil behaviour, clay chemistry, organic matter and rheology are included. Soil mechanics theory is covered in depth, but unlike many other textbooks in this area, the concepts are accessible and easy to follow.

Marshall, T.J., Holmes, J.W. and Rose, C.W. 1996. Soil physics. (3rd Edition). Cambridge University Press, Cambridge. ISBN 0-52145-151-5

My second edition copy of this textbook is starting to fall apart after 18 years of constant use. It is concise, well written and a good reference for anyone with a basic knowledge of soil science that needs information on physical behaviour. Like all soil physics textbooks, soil-water relations are the central theme. However, topics such as soil structure, mechanical behaviour and physical conditions for plant growth are also included. Soil physics is a discipline blessed with many excellent textbooks, each with particular strengths. Marshall, Holmes and Rose is in my view the best 'all-rounder'.

Wright, Ronald. 2004. A Short History of Progress. Anansi, Toronto. ISBN 0-88784-706-4.

Ronald Wright found a common theme to explain the downfall of past civilisations. From the fall of the first city, Uruk, to modern agriculture, he cites how the mismanagement of soil destroys resources, food and eventually life. Originally a Massey Lecture in Canada, this is an incredibly well researched and argued thesis. By advocating the importance of soil in the popular press, Wright has done a great favour for our discipline. This book was not intended to be a soil science book, but it helps overcome the old cliché of 'soil being treated like dirt'. Useful ammunition if you come across unenlightened individuals who find your profession bizarre, boring or unimportant.

Victor B. Asio

Visayas State University, Philippines

Soil science is a rapidly growing ecological earth science. Consequently, the number of books on the subject has greatly increased in the last two decades. So to choose my top three soil science books, I thought of this criterion: the book must have been very useful to me when I was a student and it is still useful now in my research and teaching activities as a professor of soil science. The criterion automatically disqualifies some very good books that I used as a student but for various reasons I seldom or do not use them today as well as some outstanding soil science books published in recent years but were not yet available during my student days.

My first choice is the *Properties and Management of Soils in the Tropics* by Pedro A. Sanchez published in 1976 by John Wiley and Sons. It discusses in a simple but in-depth manner the tropical environment (climate, vegetation types, geology, land use and farming systems); the classification of tropical soils using Soil Taxonomy, FAO and some other important systems; the physical and chemical properties, clay mineralogy, and exchange processes of tropical soils; soil acidity and liming; soil nutrients and fertility evaluations; and soil management under different tropical land use systems. This outstanding book certainly belongs to the most important and influential books on tropical soils. I still use it regularly and even require my graduate students to read certain parts of it.

My second choice is *Tropical Soils. A Comprehensive*

Study of their Genesis by E.C.J. Mohr, F.A. van Baren, and J. van Schuylenborgh (3rd revised edition) published in 1972 by Mouton-Ichtiar Baru-Van Hoeve. The book has three parts. Part I deals on the fundamentals of climate, rock and mineral weathering, and organic matter transformation. Part II discusses oxisols, leteritic soils, podzolic soils and podzols, vertisols, paddy soils, and andosols. Part III covers the experimental and physico-chemical study of soil-forming processes. I find it an excellent and unique book on tropical soils because of the coverage and details in which the topics are presented. It has been very useful to me especially during my masteral and doctoral studies (we used it for the course on tropical soils in Hohenheim). I still consult this book often which is an important part of my personal library.

My third choice is the standard soil science textbook in German-speaking countries, the Scheffer/Schachtschabel *Lehrbuch der Bodenkunde (Textbook of Soil Science)* now in its 16th edition (Spektrum Academisches Verlag). The book has undergone several revisions under different teams of authors. The latest edition was prepared by H.P. Blume, G.W. Bruemmer, R. Horn, E, Kandeler, I. Koegel-Knabner, R. Kretzschmar, K. Stahr, and B.M. Wilke, all leading soil scientists. It covers the origin and development of soils; physical, biological and chemical properties of and processes in soils; nutrients and contaminants; soil systematics and geography; soils and soil landscapes of Europe and the world; soil evaluation and protection. It is an excellent textbook for students who understand German. I find it also a vital reference for my research and teaching activities.

2010 Report IUSS Working Group on Global Soil Change

The newly approved IUSS Working Group on Global Soil Change met on two occasions at the 2010 World Congress of Soil Science held in Brisbane, Australia.

In the first WG meeting on 6 August, Richter and Mermut reviewed the objectives of the new Working Group and the recent history of this topic that has resulted in this new Working Group that is affiliated with Division 1.0 but which has strong connections with the other three IUSS divisions. Richter and Mermut opened the meeting by crediting:

- Prof. Dan Yaalon (2010 winner of IUSS Dokuchaev Prize) for suggesting the idea of the WG;
- Drs. Arnold, Szabolcs, and Targulian for authorship of the 1990 book entitled, *Global Soil Change*;
- IUSS-sponsored 2005 Global Soil Change conference in Mexico City;
- Global Soil Change workshops held at Duke University (2007, 2009), and
- Symposia organized at annual meetings of the Soil Science Society of America (2009, 2010 SSSA) and the American Geophysical Union (2009, 2010 AGU).

How to observe and model human-forced changes in Earth's soils and decadal pedogenic processes will be the charge of this WG. Communicating with scientists of other disciplines and with policy makers and the public is part of the WG charge.

This broad charge grows from a concern about the generally neglected state of the long-term soil-research base and the need for soil observation and monitoring data to be better connected to next-generation soil mapping and models, and multi-scale environmental and social analyses of the rapidly changing Earth system. The WG is aimed at enriching the science of anthro-pedology in the aid of soil-management sustainability, and improving management control over plant production, and soil interactions with the atmosphere, lithosphere, and hydrosphere. The chairs are writing a white paper they call "The Changing Model of Soil" that they will circulate prior to submission to a peer-review journal.

In the second WG meeting on 8 August, future activities and direction for the WG were discussed. Potential WG projects include review papers, new research projects, and future meetings (electronic and in person). To interact with others in IUSS, it was suggested that the new WG contact individuals engaged in global soil mapping projects to discuss possible collaborations.

Richter suggested a number of potential research projects and review papers that could be accomplished by researchers including students using the LTSE inventory that currently includes nearly 300 long-term soil-experiments world-wide (see http://ltse.env.duke.edu, or google "ltse"). Cross-LTSE review papers including meta-analyses could be written based on already published data from LTSEs. New cross-LTSE research based on new sampling at a set of LTSEs could be organized. Potential topics are many, for example:

- Effects of long-practiced management regimes on plant productivity; nutrient cycling; soil organic matter quality, chemistry, and stabilization; mineral weathering; microbial communities and functioning; soil structure and architecture; subsoil processes and properties; and greenhouse gas emissions.
- Scaling soil changes from field plots to regional, national and global scales.
- Linking soil carbon gains and losses to regional, national, and global models of land-use change effects on soil carbon.

Such hypothetical reviews or research are not only of academic interest. The recent and on-going debate in the *Journal of Environmental Quality* over whether inorganic nitrogen fertilizers stimulate organic matter decomposition and destabilization could be addressed by both a review paper, possibly with meta-analysis, followed up by cross-LTSE sampling and new research. A second issue of great importance concerns the effects of land-use change

on global carbon cycling. Current models could likely be greatly improved if more closely tied to soil organic carbon data collected in many LTSEs. To explore these and other issues, Richter and Mermut are helping to organize soil-change symposia at the 2010 annual meetings of SSSA and AGU. We anticipate a workshop with Chinese colleagues in May 2011 in Nanjing, with European contacts in the next 12 to 18 months, and a symposium of talks and posters at the next World Congress in Korea. Scientists interested in any aspect of these issues should communicate with Daniel Richter or Ahmet Mermut to participate in WG activities.

Daniel Richter
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Soil Memory and Environmental Reconstructions

– A Response

The note of Prof. D. Yaalon on the book "Soil Memory" (IUSS Bulletin 116) seemed interesting to us and deserves a response for two reasons. First, – our thanks for the attention of a distinguished pedologist to the problem of soil memory, which we have elucidated in a recent book. Second, - the desire to explain more clearly why soil memory is not the same as environmental reconstractions.

We agree with Prof. D. Yaalon that the concept of "soil memory" and "environmental reconstruction" appear to be close to each other, however the second term is included in the scope of the first. Thus we believe it to be a mistake to consider these concepts as identical and overlapping.

The concept of "soil memory" is considered as the fundamental capacity of soils as natural systems and special bodies to reflect, remember and record in situ in their stable solid-phase the processes of their formation and the main features of natural environment. V.V. Dokuchaev in the late 19th century offered his famous formula including that "soil is the mirror of the landscape". As pedology continue to develop, this formula has proved very meaningful and useful not only for pedology, but also for other earth sciences (geography, geology, ecology, paleogeography, etc.). Initially this formula also served as the theoretical basis for the development of paleopedology. However, over time, the notion of soil as "mirror" in relation to climate and landscape was not quite accurate, and in the 1970s V. Targulian and I.Sokolov suggested that instead of "mirror", the term "soil memory" as was more universal and essential for the fundamental characterization of soils and the pedosphere.

The concept of "environmental reconstruction" refers more to the interpretation of selected features of soils as they are believed to result from a sequence of environmental conditions over time. The properties selected are usually those thought to be useful in constructing the developmental pathways of pedological features as working hypotheses. As a result of such action a researcher creates a hypothesis (or hypotheses) about the paleopedological reconstruction of soil-forming processes and palaeogeographic reconstruction of soil-forming factors (climate, biota, relief, etc.).

Thus, the memory of soils is, for us, an inherent property of soil, existing independently of the intentions of a researcher to propose innovative reconstruction of processes and factors of soil formation. Environmental reconstruction of paleosols is a creative research operations to "read", or rather decode and decipher the information stored in the memory of soils. We hope you sense the difference.

Further, the concept of "soil memory" proposed by the authors concerns not only paleosols, but soils in general at any point in time of their existence. This includes paleosols of any age, modern Holocene and more recent soils, such as Leptosols, Fluvisols, Andosols, Arenosols, etc.

Soil memory seems to be a broader concept, not restricted to the problems of environmental reconstructions. It allows one to consider many theoretical and empirical issues that are important, not only, those for the interpretation of paleosols. Basically, this concept offers the perception of soils and the pedosphere as the complex organized information systems recording the signals from the external environment on the solid carrier of soil memory. This, in turn, implies, that a systematic study of soil memory carriers can be conducted at all hierarchical levels of organization, from macro- to submicro- and nano-level (soil matter, structure, information capacity, rates of recording of the information, its resistance to be erased in time, etc). There is a problem of distinguishing high and low information capacity and, consequently, the completeness and stability of recording environmental information in soil is not always easy to determine. The concept of soil memory allows us to substantiate, theoretically

and empirically, and explain the phenomenon of polymorphism and isomorphism of soils in relation to climate which significantly improves the correctness of paleoclimatic reconstructions.
The general theoretical perception of the concept reveals its fundamental difference from the memory of sedimentary rocks. Soil memory is a palimpsest-like record of exogenous factors and processes at each "point" of the earth's surface. The memory of sedimentary rocks is more nearly a book-like record of the same processes as those compiled for the territory of a sedimentary basin. In this sense, soils and sediments have complementary memory: where sedimentary memory is being recorded, soil memory is usually absent or weakly expressed and vice versa.

Soil memory can also be understood as the accumulated results of specific soil-forming processes, developing during long-term functioning of soil systems in certain natural environments. These processes can be viewed as mechanisms for transmitting and recording information from existing soil-forming factors to sustainable soil storage media (humus, clay minerals, oxides, salts, soil aggregates, phytoliths, cutans and cortexes, soil horizons, etc.). This understanding of memory allows us to raise the question of how the memory of a system accumulated in the past, determines its current and future behavior in time, just as we try to understand how human memory influences behavior in the present and future.

Here we have attempted to present a few theoretical and empirical consequences which makes the concept of soil memory "friendly" efficient and offers a range of new pedological problems. More details are provided in the book "Soil Memory".
We can not agree with Prof. D. Yaalon that "…the actual content of the chapters is essentially equivalent to the topic of paleo-environmental reconstruction of soil genesis that is used by many soil scientists and paleopedologists in other countries."

We hope that readers comprehend that the memory problem of soils is a more fundamental, broader and more varied concept than the problem of environmental reconstruction of the genesis of soils. Prof. D. Yaalon is absolutely right, assuming such reconstructions related to the problem of soil memory, but he is wrong, keeping the soil memory of only to environmental reconstructions.

There appears to be some confusion in interpretation and use of terminology when discussing "soil memory" and "environmental reconstruction". For us memory is more comprehensive than the latter and in his conclusion, Prof. D.Yaalon notes that "…It is "soil memory" which enables us to apply environmental reconstruction of soil evolution and change". We agree with this comment.

V.O. Targulian
S.V. Goryachkin

Statutes of the IUSS

(Approved at Council August 2010)

THE PURPOSE OF THE UNION

A. Name, objectives and seat of the IUSS

A1. The name of the Union shall be the International Union of Soil Sciences (IUSS). IUSS succeeds the International Society of Soil Science (ISSS).

A2. The objectives of the IUSS shall be to foster all branches of the soil sciences and their applications, and to give support to soil scientists in the pursuit of their activities.

A3. The activities of the IUSS shall include:

a. Arranging meetings, conferences and the World Congress of Soil Sciences;
b. Providing a structure for managing the science of soil science;
c. Arranging for the publication and distribution of material, relevant to the interests of the Union, and its members;
d. Establishing cooperation with other related organizations;
e. Arranging for studies in particular fields, such as specific definitions, classifications and databases;
f. Establishing prizes or awards to encourage and recognize excellence in the discipline;
g. Representing Soil Science to a wide external audience.
h. Taking any other action that will advance soil science

A4 The seat of the IUSS shall be the professional address of the current Secretary-General.

A5. All interpretations of the Statutes by the Council are final. The Council promulgates and amends Bye-laws where this is needed to clarify the Statutes, or to improve the operations of the IUSS.

B. Membership

The classes of membership shall be as follows:

B1. National Societies of Soil Science, or alternatively national organizations representing the soil scientists of that country, may join as **Full Members**. Only one organization can join from each country. Where the adhering organization is different from the National Soil Science Society, the National Society shall be a part of, or have a formal agreement with, the adhering organization. Regional associations may be formed by a group of countries that do not have a National Soil Science Society, so that the associations may become Full Members. To become a Full Member the agreed upon subscription fees must be paid as prescribed in the Bye-Laws or as negotiated.

B2 The individual members of a National Soil Science Society that is a Full Member of the IUSS, directly or through an adhering organization will be **Members** of the IUSS. They will pay no direct subscription, because the subscription of the National Society or other adhering organization will be considered to cover them. They will have rights to attend all IUSS World Congresses of Soil Sciences and meetings, to receive IUSS publications through their National Societies or Regional Associations, and to vote for Divisional, Commission and Working Group officers.

B3. Individuals may have **Individual Membership** and retain their link directly with the IUSS, if they reside in a country or region that is not a Full Member of the IUSS. They will have the same rights as **Members**, but will receive publications directly from the IUSS, and will pay a subscription as defined in the Bye-laws.

B4. Small National Soil Science Societies, societies or associations for related disciplines, may be admitted as **Associate Members**. They will not have a vote or seat in Council, but their members will have all other rights as **Members**. Associate Members will pay a subscription fee as defined in the Bye-laws.

B5. Organizations or individuals that wish to support soil science in various ways may become **Sustaining Members**. This carries no voting rights. They will pay a subscription fee as defined in the Bye-laws.

B6. Membership in the Union shall be suspended if subscriptions are more than 1 year in arrears, or delay negotiated with the Budget and Finance Committee in extenuating circumstances, payment becoming due on 1st January each year. If back payment is made the suspension will be withdrawn.

B7. **Honorary Members** will be elected by Council, and shall be living at the time of election. They must be scientists of great distinction in Soil Science and have made substantial contributions to ISSS/IUSS. The number of Honorary Members that can be elected every four years at the Intercongress meeting will be determined by the merit of the candidates but shall not exceed 15. Voting will take place at the InterCongress Meeting as defined in Bye-Laws 5.1h. The nominations for Honorary Membership shall be made with supporting documentation as defined in the Bye-Laws 5.1 h.

B8. A Member of any status can be expelled on a 2/3 vote of the Council if the member has broken the Statutes of the IUSS, or has brought it into disrepute, or has been persistently in arrears with subscriptions.

THE STRUCTURE OF THE IUSS

C. The Council

C1. The Council consists of the Executive Committee, one accredited representative from each Full Member, and three elected representatives of the Honorary Members.

C2. The Council is the supreme body of the IUSS, and carries general responsibility for the efficient functioning and the success of the IUSS. The President chairs the Council, unless he/she has specifically delegated his/her authority to another member of the Presidents Committee for that occasion. Fifty percent of the Council members constitute a quorum. The Council must meet during the IUSS World Congress of Soil Sciences and for the mid-congress meeting.The President or his/her delegate shall report on the activities and decisions of Council to the IUSS World Congress of Soil Sciences.

C3. Council members representing Full Members must be accredited by the relevant organization to the Secretary-General at least one month before a World Congress of Soil Sciences in writing. They shall normally serve from the beginning of one World Congress of Soil Sciences to the beginning of the next, and can be re-accredited for further terms. Their method of selection is for the relevant Full Member to decide. A voting card will be issued by the Secretary General to the appropriate adhering Full Member representative who is accredited to serve as that organization's Council member

C4. Each Full Member shall have one representative and one vote on Council.

C5. The Council has the following specific functions, together with its general responsibility for the well being of the IUSS:

a. To ratify the country and venue of IUSS World Congress of Soil Sciences and the Vice President (Congress). This ratification would be done at the InterCongress Meeting of Council, approximately 6 years before the Congress. The selection of the host country should take place at least 6 years (and normally 8 years) before the date of the World Congress of Soil Sciences. The selection of the hosts of the WCSS longer than the normal 6 years is at the discretion of Council, but this decision should be made no later than 6 years.
b. To appoint the Secretary-General, Treasurer and Deputy-Secretary-General, and if necessary terminate their appointments.
c. To determine the subscriptions fee and charges for all classes of Members (section B) upon recommendations from the Budget and Finance Committee.
d. To discuss and determine changes to the Division/Commission structure of the IUSS, on the recommendation of the Executive Committee.
e. To oversee and approve arrangements for IUSS World Congress of Soil Sciences and other major meetings.
f. To set policy guidelines for the Presidents Committee and Executive Committee, for action when Council is not in session.
g. To establish Review Groups and Task Forces and provide terms of reference for them to examine scientific, political, or financial, or administrative issues affecting the Union, and to decide action on the basis of their reports.
h. To receive the reports of the Secretary General and the audited accounts of the Treasurer, and to take appropriate action.
i. To elect Honorary Members.
j. To establish and provide terms of reference for the Standing Committees.

k. To establish, the Electoral Committee that oversees the elections of the IUSS. (As per section K1).
l. To establish and modify Bye-Laws for the smooth operation of the IUSS.
m. Ratify and publish the results of elections.
n. The Council will elect the President Elect from a list of Candidates submitted by the Standing Committee for Presidential Elections the membership of which must be geographically representative.

C6. When required the Council is empowered to make decisions by means of electronic or postal ballot.

C7. The President Elect will succeed to the position of President after 2 year, and following a further term of 2 years will take the position of Past-President for two years. President, President elect and Past President are all voting members of the Executive Committee.

D. The Presidents Committee

D1. The Presidents Committee is the collective name for the IUSS Senior Officers, i.e. the President, the Past President, the President Elect Vice President Congress, the Secretary-General, the Deputy Secretary-General and the Treasurer. The President or President Elect of the Union chairs Presidents Committee meetings.

D2. The Presidents Committee should meet proceeding and at the World Congress of Soil Sciences and Inter-Congress meeting to facilitate the organization of the Executive Committee and Council meetings. Otherwise, the members shall remain in regular contact with each other.

D3. The President Elect shall succeed the President if the latter is incapacitated or resigns, or judged unfit to serve by the Council. If the President Elect succeeds the President, then a new President Elect will be elected by Council, by electronic ballot. Both will serve for the normal term of 2 years plus the remaining term of the President who steps down.

D4. The functions of the Presidents Committee are as follows:
a. The continuing management of the IUSS, following policy guidelines established by Council.
b. Oversight of IUSS finances, as managed by the Treasurer in collaboration with the Budget and Finance Committee.
c. Preparation of Council and Executive Committee business, as proposed by the Secretary-General.
d. The production and dissemination of information and publications to members, as managed by the Secretary General.
e. Continuing contact with ICSU, other Unions and organizations.
f. International representation of the IUSS.

E. The Executive Committee

E 1. The Executive Committee shall consist of the Presidents Committee, the Treasurer, and the Chairpersons of the Divisions and Standing Committees of the IUSS. The Chairperson of a Division may delegate his or her Executive Committee authority to one of the Vice–Chairs of the Division or a Chairperson of a Commission within his/her Division, with the concurrence of the IUSS President.

E2. The Executive Committee shall be responsible for all scientific activities of the IUSS, including oversight of the Divisional structures, the work of scientific Review Groups or Task Forces, (C5g), Working Groups, scientific liaison and collaboration, and any other actions required on scientific grounds.

E3. The Executive Committee shall meet one or two days prior to the World Congress of Soil Sciences and the Inter-Congress meeting, and during these meetings. The President of the Union shall chair the Executive Committee, unless he or she has delegated his or her authority to a member of the Presidents Committee for a specific occasion.

E4. The Executive Committee shall consider all formal proposals (see G3, G7) for changes in the IUSS structures, and shall pass them to Council for decision, with their recommendation for action or rejection. All proposals should be sent to the Executive Committee at least 3 months in advance of the next Council meeting by the Secretary General.

E5. The Executive Committee shall make recommendations to Council concerning candidates for Honorary Membership, on the basis of proposals made by Full Members (see C5i).

E6. The Executive Committee shall review all Recommendations/Resolutions at their meetings and

pass them to the Council with their recommendation for approval or rejection.

E7 The activity of all Working Groups will be reviewed by the Executive Committee at their meetings; a recommendation will be made to the Council concerning the status and activities of each Working Group and whether it should be maintained or terminated.

E8. In case Council cannot meet to deal with urgent business, the Executive Committee shall act in its capacity, submitting such action to Council at its next meeting for ratification. The Executive Committee may take needed action by electronic or postal means as needed.

F. The Standing Committees

F1. Standing Committees may be established by Council to oversee areas of its business and to advise it. The Chairpersons of the Standing Committees are members of Executive Committee. The Secretary General is a non-voting ex-officio member on all Standing Committees.

G. The Divisions

G1. The scientific work of the IUSS shall be carried out through Divisions, which are defined by subject, and are arranged to cover the whole area of disciplinary interests of the Union. The Divisions shall be composed of Commissions and Working Groups.

G2. Each Division shall be managed by a Divisional Committee, consisting of Chairperson, First Vice-Chairperson, and Second Vice-Chairperson, the immediate past Divisional Chairperson, the Division Chairperson elect, and the Chairs of the Commissions in that division.

G3. To ensure proper coordination with the arrangements for the subsequent IUSS World Congress of Soil Sciences, the First and Second Vice-Chairperson of each Division shall be appointed by and from the host country of the next World Congress of Soil Sciences will take place.

G4 The Divisional Committee shall manage and direct its scientific program, and shall ensure that there is a suitable level of activity in all main topics within the Division. It shall give careful attention to the development of the science, and ensure that the Division responds to new developments.

G5. The Divisional Committee may make proposals for changes in the structure within the Division, or make comments upon proposals arising from elsewhere, and send them to the Secretary-General at least 6-months in advance of World Congress of Soil Sciences or the Inter-Congress meeting for consideration by the Executive Committee, before being sent on to Council with the views of the Executive Committee.

G6 Each Division shall have a Nominating Committee with a membership as defined in the Bye-Laws. The function of this committee is to nominate members for all offices within the Division, including all Commissions within their respective Division, excluding officers appointed (First Vice Chairpersons of each Division as shown under G3). These nominations will be passed to the Electoral Committee established by the Council.

G7 Each Division shall report its activities to the Secretary General yearly and this information will be published in the IUSS Bulletin and posted on the IUSS website.

G8. Division officers of the IUSS shall serve 6-year terms. They will be “officers elect” from the Inter-Congress to beginning of the next World Congress of Soil Sciences and then serve a 4-year term as “officers” until the end of the following World Congress of Soil Sciences.

H. The Commissions

H1. Each Commission has the responsibility for an appropriate part of the subject matter related to its Division.

H2. Each Commission shall be managed by a committee made up of a Chairperson and a first Vice-Chairperson elected by the procedures defined in Section K. The Chairperson is a member of the Divisional Committee.

H3 The activities of each Commission shall be reported yearly to the Divisional Chairperson and this

information shall form part of division report, which will be published in the IUSS Bulletin or posted on the IUSS Website.

H4. Commission officers of the IUSS (excluding Working group officers) shall serve 6 year terms. They will be "officers elect" from the Inter-Congress to the beginning of the next World Congress of Soil Sciences and then serve a 4-year term as "officers" until the end of the following World Congress of Soil Sciences.

I. The Working Groups

I1. Working Groups are part of one or more Division(s)/Commissions. Members with common interest's topics not specifically addressed by Divisions or Commissions may propose the establishment of a Working Group. If endorsed by the Division(s), the proposal shall be sent to the Executive Committee, which will confirm or deny the proposal.

I2. Working Groups will elect a Chairperson and a Vice Chairperson as officers. The IUSS and the Division(s) to which they belong will give reasonable support for their activities. The Working Group will normally exist for a short period of time as long as it maintains an active program of scientific work, but normally will not exist beyond 8 years.

I3. The activities of each Working Group shall be reported yearly to the Division(s) to which it belongs.

I4. The Working Group Officers shall serve a 4-year term and can be reelected. The period for the term of office will be at discretion of the Working Group (K8)

I5. The activity of each Working Group will be reviewed at each meeting of the Executive Committee. A Working Group showing no or very little scientific activity will be disbanded by the Executive Committee.

J. The World Congress of Soil Sciences

J1. The World Congress of Soil Sciences is the main event of the IUSS. It shall cover all parts of the discipline and of IUSS. It is open to all Members of the IUSS and other participants.

J2. The host country National Society or adhering organization shall officially cosponsor and be financially liable for the congress, and shall make all necessary fundraising and other arrangements to ensure the success of the World Congress of Soil Sciences. These arrangements shall be submitted to Council at its meeting at the previous World Congress of Soil Sciences.

J3. The proceedings of the World Congress of Soil Sciences may be published by the host country National Society, or other adhering organization, using methods agreed to by the Council.

K. Elections

K1 The Council will establish an Electoral Committee that will manage the election procedures for filling the offices of the Divisions and Commissions. The composition and duties of the Electoral Committee are defined in the Bye-Laws (5.3).

K2. The Divisional Nomination Committees (DNC) will solicit candidates for the different offices within the Divisions and Commissions, screen potential candidates and provide candidate lists to the Electoral Committee for preparation of ballots one year in advance of the next Inter-Congress Meeting. Candidates may be suggested by Full Members by submitting names to the DNC but only the DNC may place names on the list submitted to the Electoral Committee.

K3 Voting for all Divisional and Commission officers shall take place starting 6 months before Inter-Congress Meeting and be completed within 60 days.

K4. Voting by Members is done by postal or electronic means using a procedure developed by the National Society or adhering organization to the Union. Results of the election will be reported by the National Society or adhering organization to the Electoral Committee via the Secretary-General. The number of votes cast within each country shall be based on a true and fair ballot of their national membership. Item 5.2 in the Bye-Laws defines the procedure.

K5. Elections will be decided by a simple majority of votes cast.

K6. All officers except the President, President Elect, Past President, Vice President (Congress) and appointed First Vice-Chairs of the Divisions can be re-elected for one further term. The Secretary-General, Deputy Secretary-General, Treasurer, and Chairs of Standing Committees can be appointed by Council several terms.

K7. The election of Working Group officers shall take place at any organized meeting of the Working Group and elected officers will serve a maximum 4-year term starting after the election. Working group chairs can be re-elected once. Their names will be submitted to the Secretary-General as soon as possible after the election takes place.

K8. The Honorary Members to serve on Council shall be elected by a postal or electronic vote by the whole body of Honorary Members as managed by the Secretary General.at least 3 months in advance of the Mid-Congress Meeting.

OTHER REGULATIONS

L. Finance and Subscriptions

L1. The Union's funds are in the care of the Treasurer acting in consultation with the Chair of the Budget and Finance Committee. The Treasurer and Budget and Finance Committee Chair shall share legal access to and sign-off authority for all IUSS accounts and assets. Budgetary line items proposed annually by the Budget and Finance Committee are approved by the Executive Committee and Council. Annual expenditures are authorized by the Secretary-General acting in consultation with the President, for minor sums above set limits and for non-entitlement expense line items.

L2. An outside auditor shall be selected by the Executive Committee. The Treasurer shall prepare accounts for each calendar year and send them for audit. The audited accounts shall be integrated into a time course Report on by the Budget and Finance Committee and this shall be published on the IUSS website.

L3. For Full Members, at entry the adhering organization from each country shall agree with the IUSS an appropriate position on the standard scale of subscriptions, in the light of the number of members in that country's National Society for Soil Science or adhering organization, the per capita income in that country, and the arrangements made by the adhering organization. The subscription shall be due at the beginning of each calendar year. The Executive Committee shall review the scale of subscriptions for adhering members before each IUSS World Congress of Soil Sciences when proposals may be made to Council for its amendment. The Budget and Finance Committee in consultation with the Secretary General shall develop the subscription fees as defined in the Bye-Laws.

L4. The Council shall set the Individual Member, Associate Member and Sustaining Member subscription fees. The Budget and Finance Committee in consultation with the Secretary General shall develop the subscription fees as defined in the Bye-Laws.

M. Changes to the Statutes

M1.Council can only effect changes in these statutes, on a 2/3 majority of voting members of Council. The proposed changes must have been publicized to the Full Members at least 6 months before the vote.

M2. A new or revised Statute shall come into force on a date decided by Council, which shall be as soon as possible after the publication of the results of a positive vote.

N. Bye-Laws

N1. The Council will establish Bye-Laws to cover the detailed interpretations of the Statutes and set rules for Subjects that are not dealt with in the Statutes.

N2. Changes to the Bye-Laws can be made by a simple majority vote of the Council on a formal motion.

N3. A new or revised Bye-Law shall come into force on a date decided by Council, which shall be as soon as possible after the publication of the results of a positive vote.

O. Profit Sharing from Country Hosting the World Congress of Soil Sciences

O1. The IUSS is not responsible for any losses incurred by the host country in hosting the World Congress of Soil Sciences.

O2. The IUSS shall share in the profits arising from the IUSS World Congress of Soil Sciences with the host country.

O3. The funds contributed to IUSS by the host country shall be used for program enrichment of Divisions and Commissions, and for front-end funding to the host country for the next World Congress of Soil Sciences.

P. Task Force(s)

P1 The President or Executive Committee are given the power to appoint Task Force(s) as needed that would deal with specific items and for a specific time. The Task Forces would not be the same as Standing Committees but appointed for a fixed timeframe with a clearly defined agenda. Chairs of these Task Forces would not be members of the Council as are Chairs of the Executive Committee.

Bye-laws of the IUSS

Approved by IUSS Council August 2010

1. Definitions of the Bye-laws

Bye-laws are secondary to and supportive to the Statutes, and cannot contradict Statutes (Statute A5). The purpose of Bye-laws is to govern the detailed interpretation of the Statutes, and set rules for subjects that the Statutes do not deal with. They can be altered more easily and more frequently than the Statutes, as conditions change or experience is gained. Changing a Bye-law requires only a simple majority of the IUSS Council on a formal motion, whereas changing a Statute requires a 2/3 majority on a postal and/or electronic ballot (Statute M1).

2. President, President Elect and Past President

The Union shall have a President who will be an outstanding soil scientist of international standing, who has financial support from his institution or National Member. The President will serve for two years with the role of providing scientific leadership and representing the Union at international meetings. The President Elect shall serve in this role for a period of two years providing support to the President on the organisation and management of the scientific activities of the Union. After two years, the President Elect will succeed to the role of President. After two years as President, he/she will succeed to the role of Past President and serve in this capacity for two years. The President Elect and the Past President will support the President in running of the Union.

3. Vice President (Congress)

The role of the Vice President (Congress) is to lead the National Committee of the host country for the World Congress of Soil Sciences, providing leadership in the development of the scientific programme and the logistical aspects of the WCSS. The host country will nominate a person who will be confirmed by Council. In addition, the Vice President (Congress) will be a member of the President's Committee. The Vice President (Congress) serves from the end of the preceding Congress to the end of the Congress for which he/she is elected.

4. Divisions, Commissions, Working Groups, and Standing Committees

The Secretary-General maintains an up-to-date list of the full Scientific Structure at all times. Changes will be published in the Bulletin or on the IUSS web site as soon as possible.

4.1 Divisional Structure

The Divisions are:

D1. Soils in Space and Time
D2. Soil Properties and Processes
D3. Soil Use and Management
D4. The Role of Soils in Sustaining Society and the Environment

4.2 Organization of the Scientific Structure

D1. Soils in Space and Time
C1.1 Soil Morphology and Micromorphology
C1.2 Soil Geography
C1.3 Soil Genesis
C1.4 Soil Classification
C1.5 Pedometrics
C1.6 Paleopedology

D2. Soil Properties and Processes
C2.1 Soil Physics
C2.2 Soil Chemistry
C2.3 Soil Biology
C2.4 Soil Mineralogy
C2.5 Soil Physical/Chemical/Biological Interfacial Reactions

D3. Soil Use and Management
C3.1 Soil Evaluation and Land Use Planning
C3.2 Soil and Water Conservation
C3.3 Soil Fertility and Plant Nutrition
C3.4 Soil Engineering and Technology
C3.5 Soil Degradation Control, Remediation, and Reclamation

C3.6 Salt Affected Soils

D4. The Role of Soil in Sustaining Society and the Environment
C4.1 Soil and the Environment
C4.2 Soil, Food Security, and Human Health
C4.3 Soil and Land Use Change
C4.4 Soil Education and Public Awareness
C4.5 History, Philosophy, and Sociology of Soil Science

Divisions, Commissions and Working Groups, with their Chairpersons and Committees are defined in Statutes G1-G8, H1-H4, and I1-I5. The titles of the Divisions and the duties and functions of the Divisional Chairpersons and Committees are defined in the Bye-laws. The duties and functions of the Commission and Working Group Chairpersons are also defined in the Bye-laws. However, their title identities are not defined herein as these should respond to the views of the relevant members and to new developments in science. Accordingly, Council can decide changes in these as part of normal business, on the basis of proposals made by the Divisions to the Executive Committee (Statute G5 or I1).

4.3 Duties and functions of Divisional Chairpersons and Committees

Supervisory

Their task is to ensure that the Division and its Commissions and Working Groups (if any) operate effectively, and with appropriate activity. That they collaborate in an interdisciplinary manner amongst themselves and with other Divisions or parts thereof. That they organize appropriate scientific meetings between IUSS World Congresses, alone or in collaboration, and that they collaborate with Congress Committees and other relevant parts of the IUSS. The Division Chair should ensure that Commissions complete annual reports and that a summary report is sent to the Secretary-General for publication in the Bulletin or on the IUSS website with a copy to the Executive Committee. This report should be completed by January 30 each year.

Strategic

Their task is to be proactive considering wider changes in relevant sciences, make necessary changes in the Divisional structure through the Executive Committee and Council, and to address other initiatives. They should also ensure appropriate links and collaborations with related but non-IUSS science bodies.

Representational

The task of the Divisional Chairpersons is to represent the members and component bodies of the Division to and in Council and the Executive Committee. The Divisional Chairpersons and Divisional Committee should make sure that the Council and the Executive Committee are well informed, and that the interests of the Division are well served. They should also help in representing Soil Science to a wide external audience.

Organisational

Their task is to maintain good contact with the Presidents Committee and Executive Committee of IUSS, and to ensure that the Divisions play their part in the general activity of the IUSS, including the organisation of Soil Congresses, the provision of assistance to soil science in developing countries, and any other initiatives. They are accountable at the end of each year directly to the Presidents Committee.

Divisional and Commissions Prize

Establish and bestow prizes and awards within their disciplines to soil scientists of great distinction and international reputation, within their respective Division or its Commissions. These will be recognized at the World Congress of Soil Sciences.

4.4 Duties and functions of Chairpersons and Committees of Commissions

These are defined in Statute H1 and H2. It is the function of Commissions to organise meetings of all types, as agreed with the Divisional Committees, to maintain contact with members, and to collaborate with other Commissions. They should also take a full part in running the Divisions, particularly as Commission Chairpersons are members of the Divisional Committees. Joint Commissions between two or more Divisions are possible. Respective Chairpersons of Joint Commissions would then be representatives on respective Divisional Committees. The Chairperson shall complete an annual report and send it to their respective Division Chair. Reports should be completed by December 30 of each year.

4.5 Duties and functions of Chairpersons and Vice Chairpersons of Working Groups

These are defined in Statute I1 and I2. The duties and functions are to ensure that each Working Group is properly established and has membership of at least one Division. Each Working Group should hold at least one meeting between consecutive Congresses of Soil Science, and show an appropriate level of scientific activity. It should provide an annual report on its past and future activities to the Divisional Chairperson(s) before December 30.

4.6 Standing Committees

These are defined in Statute F1. Council sets up a Committee when it feels that it is likely to need advice or supporting work on a given subject indefinitely into the future. The Executive Committee will present a list of Chairs of the Standing Committees to Council for approval. The Council appoints the Committee Members. Chairs of the Standing Committees can be appointed several times. Members other than the Chairs of a Standing Committee may be reappointed by Council and normally serve for not more than two terms of four years each. The title 'Standing Committee' should not be used for a short-term investigation, where the preferred title is "Task Force", or for a scientific group, where "Working Group" is more appropriate.

4.7 IUSS representatives to other Organizations

IUSS is a member of ICSU (the International Council for Science) and through ICSU has representatives on a number of bodies SCOPE, IGBP, and CODATA together with links with other Unions (e.g. IUBS, IGU, IUGG, IUGS, and IUPAC). Representatives are appointed by Secretary General and/or the President subject to ratification by the Executive Committee normally to serve for four years or for the duration of the activity if it is less than four years. Representatives may be reappointed for several terms. All of the appointed representatives will submit an annual report of their activities to the Secretary General by January 30 of each year. These reports will be published in the Bulletin of the IUSS or on the IUSS website.

5. Elections of officers for Divisions, Commissions, and Working Groups

[See Statutes K1-K8]

5.1 Elections, candidates and nominations

a. **Members** (as defined in Statute B) who are in good standing with a National Soil or Geoscience Society with close affiliation with the discipline of soil science can take part in the voting procedure. It will be the responsibility of the Adhering Organization or National Society to determine who is in good standing and is eligible to vote.

b. **Members** can vote for as many different officers as they feel comfortable. Voting will be by postal and/or electronic methods. Voting will be conducted in advance of the Inter-Congress meeting (as defined in Statutes K1-K8).

c. If **Members** have joined more than one National Society, they must choose one of these, and ensure that they are registered to vote with this one by the National Society. The records of **Individual Members** (Statute B3), **Life Members** (remaining from the ISSS), and **Honorary Members** (Statute B7) will be held centrally by the Treasurer. The **Full** or **Associate Members** will maintain lists of other **Members**.

d. The Divisional Nominating Committees shall normally consist of the Chair and Past Chair of the Division as well as one member from each commission within the Division, plus one additional Member from the IUSS Presidents Committee or Chairs of the Standing Committees. Full Members may propose candidates to the Divisional Nominating Committees. Divisional Nominating Committees shall submit nominations to the Electoral Committee at least 12 months in advance of the next Inter-Congress meeting for all officers within the Division including all the Commissions within the Division (Statutes K2). If any candidate is discarded by the Nominating Committee, the reason must be given. Nominations of candidates will be accompanied by a short statement describing the candidate's contribution to Soil Science and IUSS and their views on the development of Soil Science. Every effort shall be made to have a broad geographical representation of nominees. The screening of potential nominee candidates should result in two nominees for each position. Members cannot be nominated for more than one position. Candidates to be nominated cannot be members of the Nominating Committee.

e. Any person nominated as a candidate must be a **Member** in good standing as defined in Statute B2, B3, B4, and B7.
f. The host country shall nominate members who are in good standing for the First and Second Vice-Chairpersons of each Division 6 years and 6 months before the Congress, they will host (Statute G3). These candidates will be presented to Electoral Committee for ratification.
g. The Electoral Committee shall ensure that there is a full list of acceptable names for all offices and that the ballot has a broad geographical representation of candidates. They need to ensure that there are at least two candidates for each office; there may be three but two is preferable. Council has the right to submit names to the Division Selection Committee for consideration. If there are not two candidates or if the geographic distribution on the ballot is not, geographically representative the Electoral Committee may add names to the ballot or remove names from the ballot as needed to have the desired geographical representation.
h. Honorary Members as defined in Statute B7 will be nominated by any **Full Member** and this material shall be sent to the Secretary General at least 6 months before the Inter-Congress meeting of the Council. The material shall not be more than 2 pages long and should show the background of the individual and his or her service to the IUSS and the impact that this person has had internationally on soil science. The nominations should be distributed to the Council members at least three months before the Inter-Congress meeting. Elections shall take place by secret ballot among Council members present for the mid-congress meeting and the results announced in the Bulletin after the Mid-Congress meeting. The president will send a letter and a certificate to the elected Honorary Members informing them of their selection. The new honorary members will be recognized at the next Congress. Council members will vote only for candidates they consider to have the requirements of a Honorary Member of the Union, Successful candidates must receive more votes than a number equivalent to half of the number of eligible voting members attending the Council Meeting.
i. Any proposal for expulsion shall be formally brought to the attention of the Council in the form of a specific motion/agenda item with supporting evidences and shall be scrutinized carefully before voting.
j. If a vacancy occurs in the Divisional Vice Chairs, the host country will nominate a candidate. The candidate will be presented to the Electoral Committee for ratification.
k. Where any vacancy occurs between normal election times (other than Divisional Vice Chairs (Item 5.1J)) the Divisional Electoral Committee shall receive nominations and draw up a list of candidates (normally two). This list will be presented to Council for a vote (which can be postal or electronic).

5.2. Voting procedure

a. Elections for the Divisional and Commission officers will be conducted by postal and/or electronic means on a one vote for one individual in each National Member. Voting shall be started 6 months before the next Inter-Congress meeting and completed within 60 days. Organising the voting will be the responsibility of the National Society (**Full** and **Associate Members**). Upon completion of the voting the Full and Associate Members will provide the Electoral Committee with the votes from their Members (vote totals and votes cast for each candidate). Precise guidelines for the voting procedures will be distributed to Members by the Secretary General 6 months before the elections take place.
b. Working Group elections shall be organised by the outgoing Chairperson and results of Working Group elections will be reported to the Secretary General.
c. The Secretary-General in concert with the Electoral Committee shall develop a procedure for the counting of all the votes.

5.3 Electoral Committee

a. The responsibility of the Council to oversee the elections is delegated to the Electoral Committee consisting of a Chairperson appointed by Council (usually the IUSS President), the Secretary-General, acting as Secretary, The Chair of the Statutes and Structure Committee, and one member from each Division (who is not a candidate for election). The Division will nominate its candidate for the Electoral Committee at a Divisional Committee meeting. The Electoral Committee will consolidate all nominations from the Divisional Committees to ensure a geographic distribution. The Electoral Committee will prepare ballots that will be distributed to all Full and Associate **Members** 9 months before the Inter-Congress meeting so they can be

distributed to all Members so that voting can be carried out as defined in the Statutes (K3). The ballots will include a brief (one paragraph) CV for each of the candidates.

b. The Electoral Committee shall receive all the ballots from all the voting constituencies. There will be one vote for each member and not adjusted in any manner to reflect the number of members in a National Society (Note Members are defined in the Statures item B2 and B3 and voting is defined in K4). Those having the majority of votes cast will then be declared elected. The names of those elected shall be notified officially by the Secretary General and shall be published in the Bulletin and on the IUSS Website.

6 Activities of IUSS between World Congresses of Soil Sciences

6.1 Divisions

Each Division is expected to organise a reasonable number of scientific meetings in appropriate science areas between Congresses, each under the aegis of the Division or one of its Commissions. Working Groups will notify the Division(s) with which they are associated of their scientific activities. Informal and small meetings require no notification or permission, but formal meetings will be considered official activities of the IUSS and should be ratified by the Division(s) at least 6 months in advance and this information transmitted to the Secretary General. The IUSS logo can then be used. The Meetings will be publicised in the Bulletin and on the IUSS website. Other assistance may be provided upon request and approval of the Secretary-General. It is acceptable and may be desirable for such meetings to be organised in collaboration with other relevant scientific bodies. Attendance at all such meetings must be open to all members of the IUSS. The attendance and a summary of the specific activity should be reported as part of annual Divisional activities.

6.2 Standing Committees

Standing Committees should keep the President, President's Committee and Executive Committee informed of their activities throughout the inter-Congress period, and should report on their work at Council meetings. Chairs of Standing Committees are proposed by the Executive Committee for approval by Council. Membership of the Standing Committees should consist of soil scientists of good standing with international experience and reputation and should seek a broad geographical representation. The current Standing Committees are:

Statutes and Structure Committee (SSC).
The committee reviews the operations of Statutes and Bye-Laws at regular intervals and suggests to the Presidents Committee changes, which will assist the smooth and efficient operations of IUSS. The Chair and the Committee provide information to members on the operating procedures of the Union.

Budget and Finance Committee (BFC)
The committee has oversight of all budgetary and finical matters of the Union and develops an annual budget and projections for futures years. These are presented at regular intervals to the Executive Committee and to Council.

Prizes and Awards Committee (PAC)
The committee initiates the call for nominations for the two IUSS awards on receipt of the nominations they evaluate and submit the names of award winners to the President. They may request assistance from the Divisional Chairs in the evaluation process. Nominations are requested after the Mid-Congress by announcements in the bulletin, IUSS Alerts and on the Wed Site. The announcement will establish the timetable for when the nominations need to be submitted. The President will inform nominators of the decision of the Committee and the President will inform the recipients of the awards and make the necessary arrangements for presentations of the awards at the IUSS Congress. Nominations will be submitted electronically.

Committee for Presidential Elections (CEP)
The membership of the committee will consist of soil scientists with a strong international reputation and considerable experience of management and leadership roles. The committee will provide guidance on the criteria required to be President of IUSS and solicit from the Executive Committee, National Members, Divisions and Commissions candidates for the position of President Elect. The Committee will review the nominations and produce a shortlist of candidates which will be presented to the Executive Committee. The Executive Committee will review the list before forwarding it to the Council for voting, by an electronic ballot in advance of the meeting of Council when the President Elect takes Office. The successful candidate should achieve 50% + 1 of the votes cast.

6.3 Treasurer

The Treasurer will be appointed by the Council based on a list of candidates determined by a Task Force appointed by the President to develop a list of suitable candidates for the said Office. The Treasurer is a member of the Executive Committee and Council and serves at the pleasure of Council. The Treasurer maintains the accounts of the Union, reporting to the Presidents Committee on a regular basis. The audited accounts are presented to the Executive Committee annually and to the Council at InterCongress and Congress Meetings of Council. The treasurer together with the Chair of the Budget and Finance Standing Committee produces an annual budget, which is presented to the Executive Committee and the Budget and Finance Standing Committee towards the end of each or in the first weeks of each Calendar Year. The Treasurer is responsible for ensuring that the Union's financial arrangements are legal and transparent. The Treasure is a member of the Presidential Committee.

7. Union Languages

7.1 Business Language

The business language of IUSS, in which Council and Committee business is transacted and official papers are published, is English. An adhering organization may distribute part or all of the official papers in the original form (English) or their own language(s).

7.2 Congress Language

The language of the World Congress of Soil Sciences is English. The host country may use its own language, but must arrange for appropriate translations into English.

8. IUSS Logo

The Union logo will be used on all official documents of the IUSS. This should also be used on all materials sanctioned by the IUSS. Any changes to the IUSS logo must be approved by Council.

9. Funding and Council Budget Control

9.1 Standard Scale Points

The IUSS shall have a standard set of scale points (S) dependent upon the wealth of the country in question (Statute L3) for admission as a **Full Member** or an **Associate Member**. The three scale points shall be in the ratio to each other as 1:3:5. Council shall periodically review this scale, at least at each Congress, and on the advice of the Budget and Finance Committee and the Executive Committee, may adjust all scale points. The General Rate R is a multiplier that is applied to all subscriptions *pro rata*, and will be used to alter the total subscription income of the IUSS. Countries are classified as Group I (High-income country**)**, Group II (Middle Income country), or Group III (Low Income Country) depending on a combination of their Gross National Income (GNI) per capita from the Work Bank: www.worldbank.org/depweb/english/modules/economic/gnp/datanot.html and their Gross Domestic Product Gross Domestic Product (GDP) per capita from: www.nationmaster.com/graph-B/eco_gdp_cap&int=-1. The CBF uses the scales set by these two sources to establish the economic group classification (I, II or III) for each country.

9.2 Budget Negotiations

Each adhering organization will enter the IUSS at a scale point S determined in negotiation between the Budget and Finance Committee in consultation with the Secretary General of IUSS and the adhering organization (Statute L3). The Budget and Finance Committee through its Chairperson shall take leadership in securing **Full Members** (as in Statute B1), **Individual Members** (as in Statute B3), **Associate Members** (as in Statute B4) and **Sustaining Members** (as in Statute B5) into the IUSS. The Budget and Finance Committee shall make recommendations to the Presidents Committee and Executive Committee for concurrence concerning financial matters of entry. Every attempt should be made for equity of subscription rate, but those countries with the ability to contribute beyond their designated scale points should be strongly encouraged to do so in negotiations between the Budget and Finance Committee and adhering organization. This scale point shall be reassessed in the same way before each Congress. If agreement cannot be reached, the case may be appealed to Council, whose decision shall be final. Adhering organization in temporary financial hardships may be given special consideration the Budget and Finance Committee in consultation with the Secretary General.

9.3 Annual Subscriptions of Full Members

The annual subscription of a **Full Member** shall be calculated as equal to US$ (SxNxR) where S is one of

the three scale points (Group I S= 5; Group II S= 3; Group III S= 1), N is the number of members in the Full Member, and R is the General Rate, which is the same for all **Full Members**. Through 2012- 2014, R = 1.75 and the US $(R*S) for Full Members are US $7.75, $4.65, and $1.55 for Group I, II, and III members, respectively.

9.4 Minimum Subscription

The minimum size of a **Full Member** is 50 **Members**.

9.5 Annual Subscriptions of Individual Members, Associate Members and Sustaining Members

The Budget and Finance Committee in consultation with the Secretary General will determine the subscription fee for **Individual Memberships**, **Associate Members**, and **Sustaining Members**.
The rate for **Individual Members**, commencing 2012 through 2014, will be $25 per member.
The annual subscription of an **Associate Member** shall be calculated as equal to US$(SxNxR), where S is one of the three scale points, N is the number of members in the **Associate Member**, and R is the General Rate, which is the same for all Associate Members. In 2012, R = 1.55 and the US$(R*S) rates for **Associate Members** are US $7.75, $4.65, and $1.55 for Group I, II, and III members, respectively.

The rate for **Sustaining Members** through 2014 is US $775.00.

9.6 Annual Budget

The Budget and Finance Committee shall prepare an annual operating budget for approval by the Executive Committee.

10. Life Membership

Members who have previously taken out **Life Membership** in ISSS will continue as **Life Members** of IUSS, and will receive all due rights and amenities.

11. Cooperating Journals

The IUSS may form a link with well-established international scientific journals of high reputation. These will be called Cooperating Journals of the IUSS. In return, it is expected that these Journals will be made available on favourable terms to IUSS **Members** (Statute B2), **Individual Members** (Statute B3), **Associate Members** (Statute B4) **Life Members** (remaining from the ISSS) and **Honorary Members** (Statute B6), and that the Journals will make a regular financial contribution to the IUSS.

12. Recommendations/ Resolutions for World Congress of Soil Sciences

Drafts need to be submitted by a **Full** or **Associate Member** in writing to the Secretary General at least 6 months before the meeting of Council at which time the proposal(s) will be discussed. These proposals will be sent by the Secretary-General to the Executive Committee and Council for review so that the Executive Committee can make a recommendation to the full Council. The Council will discuss the drafts and make changes they feel deemed appropriate and the vote to approve or disapprove the drafts.

13. Changes to the Scientific Structure of the IUSS

Members representing 10 **Full Members** of the Union may submit to the Secretary-General a proposal for change in the scientific structure of the IUSS. The Divisional Committees may make recommendations for changes within their respective Divisions as define in G5 of the Statutes. The Executive Committee will consider each proposal before it is sent to Council with its recommendations. All proposals must be submitted to Council members at least one year before the meeting of Council at which the proposal(s) will be discussed.

14. Inter-Congress Meeting

The Inter-Congress Meeting of the Council is held every 4 years at the venue of the upcoming World Congress of Soil Science 2 years before the Congress. The major purpose of this meeting is business meeting of the Council. However, at the discretion of the host country it can be linked to a symposium or other scientific activity that is a topic of general interest to soil science.

15. Succession of Divisional and Commission Officers

The First Vice Chairperson shall succeed the Chairperson of a Division or Commission if the said officer shall be incapacitated, resign, or judged to be unfit to serve by Council. Divisional Electoral Com-

mittees shall receive nominations and draw up a list of candidates (normally two) to fill any offices not filled by succession. This list will be presented to Council to vote.

16. Membership in ICSU

As a member of ICSU, IUSS adheres to the principles of ICSU and support the free circulation of scientific ideas and scientists and the other provisions as defined by ICSU.

17. Profit sharing IUSS World Congress of Soil Sciences

The proportion of the profits paid to the IUSS should be determined by negotiation between the Local Organizing Committee and the Treasurer and the Chair of the Committee on Budget and Finance, not including the repayment of front-end costs provided by IUSS.

18. IUSS Bulletin

The Secretary General and Deputy Secretary General shall produce, twice per year, a Bulletin which will present information about the organization of the Union, reports on activities within the Union, its Divisions, Commissions and Working Groups, reports on activities in other related Unions, and any other information which may be of interest to members of the Union (including reviews of books and other publications). The Bulletin will be published on the Union's website.

19. IUSS Website

The Deputy Secretary General shall maintain the Union's website and have broad editorial control over the content.

20. Task Force

The duties of a Task Force are defined by the President or Executive Committee when a Task Force is created. The number of members of Task Force is at the discretion of the President or Executive Committee as are the members but it is expected that said members will be representative of the IUSS and in most cases, the members will not be members of the Executive Committee. A Task Force is set up for a specific purpose and for a specified length of time.

Examples of possible Task Forces and duties are one for the search for Secretary General, Deputy Secretary General, and Treasure. Another example is a Task Force to develop a procedure for direct voting of Members for all officers not appointed by the Council. At present each country holds elections and forwards the result to the Secretary General and this has not worked that well. WWW based voting system is needed and a procedure needs to be set up to all this. Several National Societies used this type of systems, as do other large Organizations. The task force should exactly spell out all rules, investigate how web voting should be done (by automatic check of IP addresses etc), and use electronics to speed up the whole process.

21. Secretary General Duties

The SG plays a key role in the administration, and management of IUSS and assisting the President in scientific leadership. Duties include day- to-day management and administration of IUSS including close communication with IUSS officers, national member societies and representatives, and members. The SG will maintain, on behalf of IUSS, links with the International Council of Science (ICSU) and its Unions (in particular the GeoUnion group within ICSU), and other organizations such as the FAO, UNEP and UNESCO. The SG will conduct elections of division and commission officers; and organize elections and ballots for Council Voting. The Secretary General will work with the IUSS Treasurer and Chair of the Budget and Finance Committee to ensure the collection of dues and certification of members; in concert with the officers, prepare and disseminate the agenda, reports, and minutes for Executive Committee and Council meetings; and, in collaboration with the Deputy Secretary General, publish the IUSS Bulletin and the IUSS Alerts.
Qualifications: a distinguished soil scientist with a record of accomplishment in academe, industry or government; a record of participation and leadership in IUSS and knowledge of IUSS structure and activities; stability and flexibility in employment; support of employer in terms of time commitments to the position and use of facilities (office, computer, telephone, photocopying, printing, etc.); a level of financial support from employer/country to support the activities of the SG (e.g., secretary, travel, etc.), outstanding interpersonal and organizational skills; excellent English and communica-

tion (writing and speaking) skills; and willingness to travel to meetings around the world to represent IUSS. The candidates need good interpersonal skills to be able to interact with all sectors of the Union and other cooperating bodies.

22. Deputy Secretary General

Duties: The DSG plays a key role in the administration, and management of IUSS. Duties include: assisting the Secretary General when needed; maintenance of the IUSS website; responsibility for the IUSS Bulletin; and dissemination of further information about IUSS, e.g. "IUSS Alerts".
Qualifications: a distinguished soil scientist with a record of accomplishment in academe, industry or government; a record of participation and leadership in IUSS and knowledge of IUSS structure and activities; stability and flexibility in employment; support of employer in terms of time commitments to the position and use of facilities (office, computer, telephone, photocopying, printing, etc.); a level of financial support from employer/country to support the activities of the DSG (e.g., secretary, travel, etc.), outstanding interpersonal and organizational skills; excellent English and communication (writing and speaking) skills; and proficiency in information technology.

23. President Duties

The President provides scientific leadership and strategic direction for the IUSS and on behalf of IUSS interacts and represents with other organizations (e.g. ICSU, UN bodies, National Societies and Academies etc) and is responsible for the overall operation of the IUSS.

24. President Elect and Past President Duties

Support the President in all aspects of the operation of IUSS and other assignments and duties as assigned by the President.

25. Submissions for Host Counties

Initial information will include proposed timings and venues, brief details of how the National Society will mange the Congress and information relating to any financial support available and a summary of the range of activities that might be included in the program in addition to normal scientific activities.

26. Approved Working Groups

Acid Sulphate Soils
Cryosls
Digital Soil Mapping
Land Degradation
WRB
Urban Soils
Proximal Soil Sensing
Global Soil Change
Heritage Soils,
Forest Soils
Universal Soil Classification
Soil Monitoring
Soil Information Standards

27. IUSS Awards

IUSS awards the Dokuchaev and Liebig Awards every four years. These awards will be made for outstanding research accomplishments, in the field of soil science and substantial contributions to IUSS. The awards consist of an engraved medal, a certificate, a US$ 1000 honorarium, and financial support to attend the presentation at the WCSS. Nominations for these awards may be made by National Members, Divisions, Commissions, and individuals. Nominations will include a full case for the award including a detailed curriculum vita (giving full details of research accomplishments) and may indicate the award for which the nomination is made. This will not exceed 10 pages. The nomination may additionally include supporting letters.

Reports of meetings

The VII National Congress of the Cuban Soil Science Society

In its 25 Anniversary, the VII Congress of the Cuban Soil Science Society was held at the Escuela Superior de la Industria Básica at Havana City between July 7 to 9 2010, with the participation of 250 members of the whole country and 20 participants from Mexico, Costa Rica, Brazil and USA. Five conferences and near 220 papers of different subjects like: impact of Global Changes on agricultural soils; urban soils; use of alternative nutrient sources; education of Soil Science; Geomatic and Soil Science; the National Soil Conservation Program; etc, were discussed. On the General Assembly, Dr. Olegario Muñiz Ugarte, from Soil Institute (sccsmuniz@minag.cu) was reelected President of the Society for the next 4 years. The distinguished scientists, Pedro Sánchez from USA, Segundo Urquiaga from Brazil and Jean J. Drevon from France, received the Members of Honor condition of the Cuban Soil Science Society.

Report on the International Conference of Soil Fertility and Soil Productivity

Berlin, 16-20th March 2010

The International Conference of Soil Fertility and Soil Productivity, two features to be distinguished, differences of efficiency of Soils for Land Uses, Expenditures and Returns was organized by the, International Union of Soil Science (IUSS) Division 3 - Soil Use and Management, University Duisburg-Essen, Germany, and Humboldt-Universitaet zu Berlin, Germany, together with WG Soil Fertility and Plant Nutrition of the German Soil Science Society, Society for Plant Nutrition of Germany, Society of Agronomy of Germany, International WG Soil Fertility (IOSDV). The host Humboldt University, founded in 1810, celebrated in 2010 its 200 years anniversary which was a good occasion to come to Berlin. The conference site was the large and impressive hall of the Faculty of Agriculture and Horticulture with the Daniel Albrecht Thaer statue. His work is close related to the conference thematic Soil Fertility and Soil Productivity. Albrecht Thaer discovered the importance of soil organic matter content for soil fertility and inspired the former Prussian State to make strong use of it to improve the food supply of population from the often poor sandy soils in the 18th century. The conference was visited by 139 participants from 40 countries and all continents. There was a good participation (39) from Africa, Asia. and South America, from Europe 73. Encouraging was also the high attendance of woman and young scientists. Thus a good structure of participants was achieved and a lively conference community was the result. A big problem was the visa application for Europe, particular the restrictions for young scientists. Beside this today the procedure is complicated, often long lasting, and needs time and additional travel costs to visit the consulate. There were many disappointments despite the capability to finance the conference participation.

The conference thematic soil fertility and soil productivity was covered by 13 topics: (1) Concepts of soil fertility and soil productivity, contents chances, limitations and contradictions, (2) Soil quality concepts and indicators, (3) Soil properties for soil fertility and for use of soil services, (4) Soil productivity and soil investments based services, (5) Other natural plant production factors than soil, (6) Short time investments for use of soil productivity, (7) Soil conservation measures, (8) Modelling, (9) Soil changes and impacts by shift from use of soil fertility properties to soil productivity properties, (10) Land management and policy requirements, (11) Future perspective of soil use, (12) Changing global conditions, (13) Prospect of soil fertility and soil productivity.

The opening speeches were presented by Heino von Meyer (OECD), Germany about macro-economic prospects, Chistian Feller (IRD), France about history and role of soil fertility in different regions of the world, and Stephan Dabbert, University Hohenheim, Germany about farm economics.

The strongest interest did find the theme (7) maintenance and improvement of soil fertility with a focus on organic matter. Other soil conservation measures seem to play a minor role in soil science research today. Interesting is that there is only few discussion on the potential of soils for carbon dioxide sequestration, and no about the optimum of organic matter content of soils and other functions of organic matter than soil structure stabilization, improving field capacity, and as carbon dioxide sink. The pre-

sentations showed that for soil fertility research necessary long term field experiments are endangered. Most of the presented results were based on short time and green house experiments. In Asia, Africa and East Europe the spectrum of soil fertility research is broader than in West and South Europe were it is restricted on organic matter content and prevention of erosion. But in Eastern Europe a strong decrease in soil fertility maintenance investments of the farms was observed since 1989.

A larger number of presentations did deal with soil quality features and soil quality indicators. Missing were discussions about evaluation scales. Other big blocks on presentation did deal with nitrogen delivery of soils, problems of soil fertility by extension of tillage in other climatic zones, maintenance of extreme high productivity as in the Indo-Gangethic plain in India, the exhaustion of soil Zn and Fe, the influence on soil fertility by under financing of small farms, the influence of land ownership and tenants, low education of particular female farmers. A great number of other fields of soil fertility and productivity were presented and discussed.

The Faculty of Agriculture and Horticulture of the Humboldt-Universität zu Berlin honoured Christian Feller, France, John Ryan, Syria (ICARDA) and Wolfgang Burghardt, Germany with the Daniel Albrecht Thaer medal.

Part of the conference were a moving gala buffet in the Albrecht Thaer Hall with music from a typical Berlin organ grinder, and a one day excursion to sandy areas of Trebbin south of Berlin. 5 sites with soil profiles were presented and the influence of low elevation differences on soil humus content and soil fertility were demonstrated.

The Conference of soil fertility and Soil Productivity in Berlin was a big event and success. For this the local organizers many thanks. Many thanks also the German Science Foundation for financially support of the conference and the Kali and Salz AG/International Potash Institute for travel support.

Wolfgang Burghardt

Management of Natural Resources to Sustain Soil Health and Quality

May 26-28, 2010

Ondokuz Mayis University, Samsun, Turkey

International Soil Science Congress (ISSC) on “Management of Natural Resources to Sustain Soil Health and Quality” was held at Ondokuz Mayis University in Samsun, Turkey, in collaboration with The Soil Science Society of Turkey and The Institute of Soil and Water Resources Research in Samsun, May 26-28, 2010. The opening ceremony and the keynote speeches were in the Atatürk Congress and Culture Center in Ondokuz May?s University with attendance of more than 350 participants from 37 different countries.

The congress was continued in three different meeting rooms at Tepe Hotel with 87 oral and 210 poster presentations. The following topics in soil science were discussed in the oral and poster presentations;

I. Soil Physics and Chemistry
II. Soil Ecology, Biology and Biochemistry
III. Soil Pedology, Classification and Mapping
IV. Soil Fertility and Plant Nutrition
V. Land Degradation, Management and Conservation
VI. Soil, Water Pollution and Remediation
VII. Soil Health and Quality
VIII. Sustainable use of Natural Resources in Agricultural Ecosystem

Congress participants presented a total of 297 papers over the congress of two days, with keynote presentations by Stephen Nortcliff (University of Reading, Department of Soil Science, UK), Nicola Senesi (University of Bari, Department of Agroforestal and Environmental Biology and Chemistry, Italy), Donald Gabriels (Ghent University, Department of Soil Management, Belgium), Ajit Varma (Amity University, Amity Institute of Microbial Technology, India) and, Mehmet Aydin (Mustafa Kemal University, Department of Soil Science, Turkey).

The opening cocktail at the end of first day was held in The Guest House of Ondokuz Mayis University. It was a nice time for participants to meet and know each other and start new friendships.

There was an excursion from the congress center to Bafra Plain in the afternoon of second day. After visiting two different soil profiles, participants were taken to the wetland in Bafra plain which shelters approximately 320 bird species. Paphlagonia Rock Tombs and two big dams on Kizilirmak River, Alt?nkaya and Derbent, were also visited.

After a short cocktail break in Kolay and walking in the town, dinner was held near the lake of Derbent dam.

Gala Dinner was in the OMTEL Hotel on the coastline of Black Sea at the last day of the congress.

The 30th Annual Meeting of the Pacific Northwest Section of the AOAC INTERNATIONAL, USA

The 30th Annual Meeting of the Pacific Northwest Section of the AOAC INTERNATIONAL was held at the University of Puget Sound in Tacoma, Washington, USA on June 22-23, 2010. We have held our Annual Meetings here since 1998. James P. Hungerford, Co-Chair of the Pacific Northwest Section, welcomed the attendees that included microbiologists, chemists, toxicologists, biochemists, and molecular biologists from universities, federal, state and provincial research stations, private laboratories, and government agencies. The theme of the meeting was "*Preparing for Emerging Threats*".

Liz Cribbin gave an update on the activities of the AOAC INTERNATIONAL. There were five keynote presentations. The meeting began with the following keynote speakers (1) Reopening Fisheries after an Oil Spill: Tainting, Chemical Analysis, and Risks to Human Health: Tracy Collier (2) Microbiological Research at OARSA/CFSAN/FDA -Preparing for Emergencies: Marleen M. Wekell (3) Green Approaches in Taxol Cancer Research: Kevin Walker (4) Flow Injection Analysis: From Beakers to Microfluidics**:** Jarda Ruzicka, and (5)

Emerging and Legacy Organic Pollutants and the Environmental Connection with Human Health: Donald G. Patterson, Jr.

The Seminar Sessions included lectures and informal discussions on topics in Microbiology, Soil and Environmental Chemistry, Pesticides and Industrial Contaminants, Marine Toxins, and Paralytic Shellfish Toxins. The Training Sessions included Microfluidic Automation in Analytical Chemistry, Molecular Methods in Food Microbiology, A Pragmatic Approach for Ultra Trace Mercury Analysis, and Sample Pretreatment Automation. The program also included Membership Reception and Vendor Expo (an exhibition of scientific equipment, supplies, and services). The Poster Presentation was concurrent with the Exhibitor/Vendor Session on June 22. At the Membership Reception, the attendees participated in a quiz "*Are you smarter than your fellow chemist or microbiologist, eh*? At the banquet, Arlene Blum, gave an inspiring presentation on "*Breaking Trail: Peaks, Public Health, and Policy*".

The 2009–2010 Executive included James P. Hungerford (Co-Chair), Carlos Abeyta, Jr. (Co-Chair), Yash P. Kalra (Past Chair), Mike Grant (Co-Treasurer), Fred Krick (Co-Treasurer), and Nancy Hill (Secretary). The Planning Committee included Carlos Abeyta, Jr., Don Bark, Katherine Chan, Margaret Davis, Mike Grant, Nancy Hill, Jerry Hirsch, Jinxin Hu, James P. Hungerford, Ola Hungerford, Yash P. Kalra, Fred Krick, Shelley Lankford, Ed Paski, and Josephine Pompey. The Section is committed to serve as a primary resource for networking, timely exchange of knowledge, and laboratory information for the Northwest scientists. For further information on the Section, please visit us at www.aoacpacnw.com.

The AOAC INTERNATIONAL is a global facilitator in the validation of analytical methods. It was founded in 1884 in Philadelphia, Pennsylvania, USA as the *Association of Official Agricultural Chemists*. The name was changed to *the Association of Official Analytical Chemists* in 1965 and *AOAC INTERNATIONAL* in 1991. The Pacific Northwest Section is the first Section of AOAC. It was formed in 1981. It includes four states in USA (Alaska, Idaho, Oregon, and Washington) and two provinces in Canada (Alberta and British Columbia). Further information is available from AOAC INTERNATIONAL, 481 North Frederick Avenue, Suite 500, Gaithersburg, Maryland 20877-2417, USA; Phone: (301) 924-7077 or (800) 379-2622 (toll-free from North America); Fax : (301) 924-7089; Email: aoac@aoac.org.

Yash P. Kalra, Edmonton, Alberta, Canada
Email: yashpk1@hotmail.com

First International Field Summer School on Palaeopedology for young scholars

"Paleosols as a depository of data on past environments", August 3-7, Western Siberia, Russia.

The school was organized by the Institute of Soil Science and Agrochemistry of the Siberian branch of the Russian Academy of Sciences, Novosibirsk. The Institute is well known for its more then 20 years expertise in paleogeographic reconstructions for continental Eurasia based on the study of paleosols, with a special focus on humus substances (pedohumus method). The Commission on Palaeopedology of IUSS and Dokuchaev Soil Science Society were active in the organization of the conference.

The school was held around a small village Volodarka, 250 km south of Novosibirsk and 100 km south of Barnaul right on the bank of river Ob. This is a part of extensive loess plateau famous for its loess-paleosol sequences with detail record of diverse lower, middle and upper Pleistocene history. Due to combination of tectonic activity and erosion cycles a set of buried, surface and exhumed paleosols can be observed in river exposures up to 50 m high.

Palaeopedology is experiencing such rapid development that latest approaches, methods and ideas are of state-of-the art, and are not presented in lecture courses. The main incentive of the school was to give young scholars knowledge on recent advances and field techniques in paleosol studies.

45 participants were senior undergraduate and postgraduate students from different parts of Russia (Novosibirsk, Ulan-Ude, Sverdlovsk, Moscow), Kazakhstan and Ukraine. Training included both lectures of distinguished experts in palaeopedology and field excursions and master classes. Lectures were given on general aspects of palaeopedology and Quater-

Fig. 1. Paleosols of three inter-glacial stages (according to ocean isotopic stages) in buried and exhumed bedding (in the right corner) in exposure of river Ob: OIS 11 (lower horizon), OIS 9 (middle horizon), OIS 7 (upper horizon).

Fig. 2. School participants on the exposure in the ancient gulley with loess-paleosol sequence.

nary stratigraphy (Alexander Makeev, Moscow), classification of paleosols (Irina Fedeneva, Novosibirsk), records of the former environment in paleosols (Alexander Alexandrovski, Moscow), catenary sequences of paleosols (Svetlana Sycheva, Moscow) and comparative studies of humus in surface and buried Chernozems (Igor Ivanov, Puschino). Few lectures were devoted to new techniques of paleosol studies: microbiomorphic analysis (Alexandra Golieva, Moscow), pedohumus method (Maria Dergacheva, Novosibirsk), paleomagnetic method (Zinaida Gnibidenko, Novosibirsk), isotopic study of organic substances (Wolfgang Zech, Germany).

A special session was organized for student's presentations. They all presented results of their studies of buried and surface paleosols in different regions (Western Siberia, Tuva, Urals, Baikal area, Russian Plain, Central Mexico and others). Students were awarded by books relevant for paleo.

During the field part of the school students examined loess-paleosol sequences of river Ob exposures. Master-classes, presented by lecturers (Alexandrovski, Golieva, Dergacheva, Ivanov, Makeev) were focused on the field study of buried and exhumed

paleosols (morphology, field interpretation, sampling for different analyses, etc.). A separate master class was given on field research of paleosol sequences of ancient erosion landforms (Sycheva).
At the end of the summer school participants enjoyed a trip to Teletskoye Lake – one of the most famous beauties of Altai Mountains.
All participants (both students and lecturers) admit that the first school on palaeopedology was successful. Next school is planned for the August, 2011.
Students wishing to attend are advised to contact Maria Dergacheva (mid555@yandex.com).

Maria Dergacheva,
Institute of Soil Science and Agrochemistry of the Siberian branch of the Russian Academy of Sciences, Novosibirsk
Alexander Makeev,
Institute of ecological soil science, Moscow State University

XI Congress pf Croatian Society of Soil Science

Croatia, National Park Plitvice Lakes, July 05.- 08. 2010

Following the tradition of the Croatian Society of Soil Science, after four years the XI. Congress was held in National park Plitvice lakes, July 05.- 08. 2010.
The Congress was organized in conjunction with the International Union of Soil Science and European Confederation of Soil Science Societies as a Croatian congress with international participation, which was evidenced by contributions of participants from 14 European countries: Austria, Bosnia and Herzegovina, Czech Republic, Germany, Italy, Latvia, Lithuania, Hungary, Poland, Romania, Russia, Slovakia, Slovenia and Croatia,
The Congress was prepared and organized by teams of organizers working in Congress committees of multidisciplinary structure, both with regard to professions and specialties and institutions and companies from which they were elected. The Congress was headed by Prof. Stjepan Husnjak, PhD, Congress president and president of the Croatian Society of Soil Science, Prof. Nikola Pernar, PhD, chairman of the Scientific Committee, and Prof. Milan Poljak, PhD, chairman of the Organizing Committee. The Honorary Congress Committee was made up of the leading Croatian and international soil scientists.
After the four plenary lectures, given by the President of Croatian Society of Soil Science Stjepan Husnjak (*Recommendations for soil management in Croatia*), President of the European Confederation of Soil Science Societies Nicola Senesi (*Interactions of soil organic matter/humic substances with pesticide residues and metal ions in soil*), Wilfried E.H. Blum (*Food against biofuels: What are the future perspectives?)* and Karl-Heinz Feger (*Functioning of Forest Soils in the Water Cycle*), congress work proceeded in the following sections:
- Soil biology
- Fertilization of soil
- Land management
- Laboratory methods

- Soil tillage
- Pedogenetic processes and soil properties
- Soil and plant
- Soil, water and climatic changes
- Soil and water protection

The program included 53 oral and 48 poster presentations. During the Congress one-day field excursion in Krbava field, with a several hours visit to the National park Plitvice lakes with professional guide, was also organized.

The gala dinner involved presentation of prizes for the best posters, and awards of the Croatian Society of Soil Science: "Prof. Mihovil Gracanin" to the best research assistants, and deserving scientists for their contribution to the development of soil science in Croatia.

The Congress reflected the good traditions of the Croatian Society of Soil Science and point out importance of organizing it.

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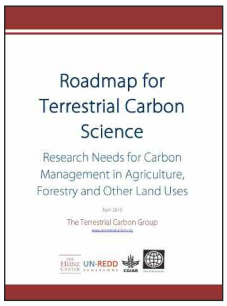
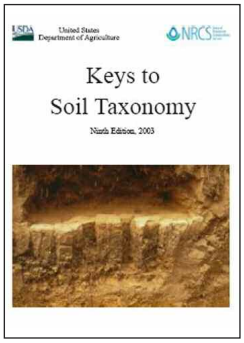
New Publications

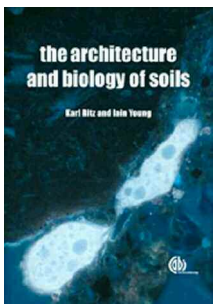


Roadmap for Terrestrial Carbon Science: Research Needs for Carbon Management in Agriculture, Forestry and Other Land Uses. In April 2010, the Terrestrial Carbon Group released the Roadmap for Terrestrial Carbon Science: Research Needs for Carbon Management in Agriculture, Forestry and Other Land Uses. This work represents a partnership among the Terrestrial Carbon Group, the UN-REDD agencies, the World Bank, and the Consultative Group on International Agricultural Research (CGIAR) institutions to identify scientific and technical advancements needed to accelerate avoided emissions and sequestration of terrestrial carbon. The full report is available at: www.terrestrialcarbon.org

Synchrotron-based Techniques in Soils and Sediments, Development in Soil Science 34, Edited By Balwant Singh, Markus Grafe. Elsevier, Amsterdam. 2010 ISBN-13: 978-0-444-53261-9. Over the past 20 years, synchrotron-based research applications have provided important insight into the geochemical cycling of ions and the chemical and crystallographic properties of minerals in soils and sediments. Of particular significance is the understanding of local coordination environments with the use of X-ray absorption spectroscopy. The high flux and brightness of the X-ray beams have allowed researchers to work at environmentally relevant concentrations. The use of focusing mirrors and apertures which allow for mapping and trace particle surfaces, microbes, roots, channels and elements at the micron and at a nano-meter scale in 2 and 3D have also been a great enhancement to science. This book provides the most up-to-date information on synchrotron-based research applications in the field of soil, sediment and earth sciences. Invited authors provide chapters on a wide range of research topics including multiphase flow and transport processes (physical aspects), rhizosphere and microbial life (biological aspects), and dynamics of C, N, S, P and heavy metals and metalloids (chemical aspects). In addition, perspectives on the impact of synchrotron based applications, particularly X-ray absorption spectroscopy, and the role of synchrotron applications in remediation, regulatory, and decision making processes are considered.

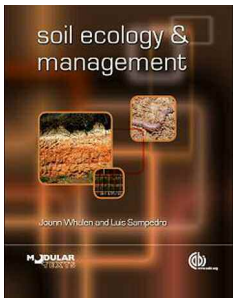


Keys to soil taxonomy, 11th edition. By Soil Survey Staff. USDA-Natural Resources Conservation Service, Washington, DC. The 11th edition of Soil Taxonomy is now available. For decades, NRCS has worked with soil scientists from around the world to increase awareness and expand knowledge concerning the importance of soil and its impact on all aspects of life. The "Keys" have been translated into Spanish. Soil scientists and other professionals from Latino America, the United States, and other countries will benefit from this effort for years to come. While soils differ globally, the ability to apply a system that is universally understood and accepted is a goal shared by many soil scientists. As the world struggles with global warming and other environmental challenges, having a universally accepted method that can be applied when addressing soil problems will contribute to successful outcomes. To download the 11th edition click here; the Spanish version (2006) of the 10th edition is available here.

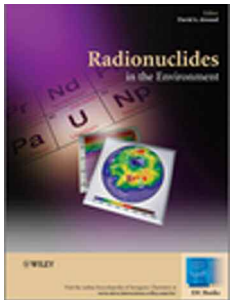


The Architecture and Biology of Soils: Life in Inner Space. Edited by K Ritz, Cranfield University, UK, I M Young, University of Abertay, Dundee, July 2010. Hardback, 400 Pages. 9781845935320UK £95.00, €135.00. Soil is a fundamental and critical, yet often overlooked, component of terrestrial ecosystems. It is an extremely complex environment, supporting levels of diversity far greater than any ecosystem above ground. This book explores how soil structure develops and the consequences this has for life under-

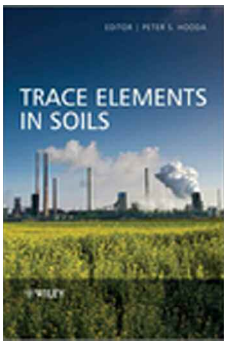
ground. The effects of spatial arrangement, of soil's physical and biological components on their interaction and function are used to demonstrate their roles in ecosystem dynamics. Bringing together existing knowledge in the areas of soil biology and physics, this book explores the key characteristics of soil spatial architecture.



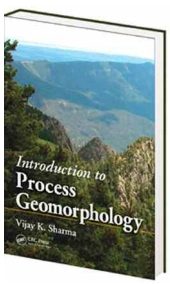
Soil Ecology and Management. By J K Whalen, McGill University, Canada, L Sampedro, Centro de Investigación Forestal de Lourizán Pontevedra, Galicia, Spain December 2009. Paperback, 304 Pages. 9781845935634. £37.50 €55.00. Soil Ecology and Management describes the organisms inhabiting the soil, their functions and interactions and the dimensions of human impact on the activity of soil organisms and soil ecological function. Chapters discuss basic soil characteristics and biogeochemical cycling, key soil flora and fauna as well as community-level dynamics (soil food webs). Unlike other soil biology and ecology textbooks, this text also conveys a better understanding of how human activities impact upon soil ecology in a section on ecosystem management and its effects on soil biota. The authors provide a unique perspective on the utility of soil organisms by exploring the biodiversity of soil food webs, how they are impacted by human activities and intervention and their management.



Radionuclides in the Environment. David Atwood (Editor). ISBN: 978-0-470-71434-8. Hardcover, 522 pages. Wiley, May 2010 £150.00 / €172.50. The global growth of the nuclear power industry will require a complete understanding of the impact of radionuclides in the environment. A great deal is known about the sources of radionuclides and their occurrence in the environment. However, the basic chemistry of these elements is a continually growing area of research. There is no single resource for obtaining a holistic understanding of radionuclide environmental chemisty. The proposed book will provide this resource with an element-specific coverage of the occurrence, chemistry, and speciation of environmental radionuclides written by experts in the area. The coverage for each element will be presented in a standard format, which will make it easier for the user to find all relevant information: 1. Occurrence. 2. Chemistry and Speciation with regards to: a) soil (with adsorption or reactions on humic matter and mineral phases); b) water (may include biological uptake where this information is known); c) air 3. Separation Techniques; 4. Analytical Characterization Techniques; 5. Remediation (potential techniques or existing technologies).

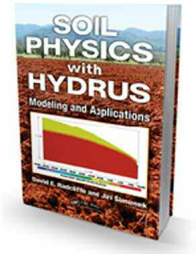


Trace Elements in Soils. Peter Hooda (Editor). ISBN: 978-1-4051-6037-7. Hardcover, 616 pages. April 2010, Wiley-Blackwell. £125.00, €143.80 Trace elements occur naturally in soils and some are essential nutrients for plant growth as well as human and animal health. However, at elevated levels, all trace elements become potentially toxic. Anthropogenic input of trace elements into the natural environment therefore poses a range of ecological and health problems. As a result of their persistence and potential toxicity, trace elements continue to receive widespread scientific and legislative attention. Trace Elements in Soils reviews the latest research in the field, providing a comprehensive overview of the chemistry, analysis, fate and regulation of trace elements in soils, as well as remediation strategies for contaminated soil. The book is divided into four sections: (i) Basic principles, processes, sampling and analytical aspects: presents an overview including general soil chemistry, soil sampling, analysis, fractionation and speciation. (ii) Long-term issues, impacts and predictive modelling: reviews major sources of metal inputs, the impact on soil ecology, trace element deficient soils and chemical speciation modelling. (iii) Bioavailability, risk assessment and remediation: discusses bioavailability, regulatory limits and cleanup technology for contaminated soils including phytoremediation and trace element immobilization. (iv) Characteristics and behaviour of individual elements.

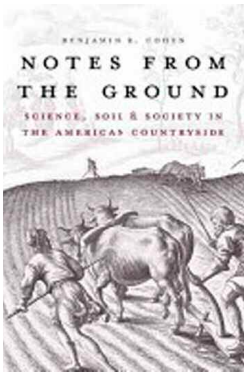


Introduction to Process Geomorphology. Vijay K. Sharma. CRC Press, 2010. 435 pp. ISBN: 9781439803370. Price: $119.95. Introduction to Process Geomorphology provides an integrative approach to the process dynamics and the origin of landforms by the

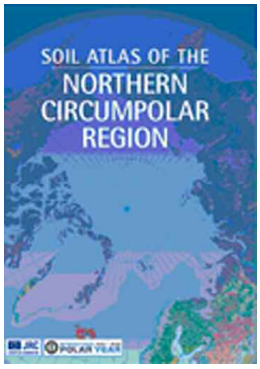
contemporary processes involved in their evolution. The author highlights the physical and chemical laws governing the activity of the earth-surface processes in specific environmental stress conditions and puts forward competing hypotheses on the evolution of landforms, and discusses the bases of internal geologic processes for the explanation of the tectogenic features of the earth. Landforms also evolve over a long period of cyclic and geologic time, inheriting the imprints of past process rates and/or process domains. The principles and methods of evaluating the signature of environmental change are highlighted in the text by citing suitable studies. The process-form relationships provide the building blocks also for the optimum utilization of the land resources of the earth, and quantitative assessment of the stability of geomorphic systems and the quality of environment. The approach in this part of the text enables readers to gain an in-depth understanding of the application of the principles of geomorphology to the evaluation, planning and management of the earth's resources for sustainable development.



Soil Physics with HYDRUS: Modeling and Applications. David E. Radcliffe and Jiri Simunek. CRC Press, 2010. 388 pp. ISBN: 9781420073805 Price: $99.95. Numerical models have become much more efficient, making their application to problems increasingly widespread. User-friendly interfaces make the setup of a model much easier and more intuitive while increased computer speed can solve difficult problems in a matter of minutes. Co-authored by the software's creator, Dr. Jirka Šimunek, Soil Physics with HYDRUS: Modeling and Applications demonstrates one- and two-dimensional simulations and computer animations of numerical models using the HYDRUS software. Classroom-tested at the University of Georgia by Dr. David Radcliffe, this volume includes numerous examples and homework problems. It provides students with access to the HYDRUS-1D program as well as the Rosetta Module, which contains large volumes of information on the hydraulic properties of soils. The authors use HYDRUS-1D for problems that demonstrate infiltration, evaporation, and percolation of water through soils of different textures and layered soils. They also use it to show heat flow and solute transport in these systems, including the effect of physical and chemical nonequilibrium conditions. The book includes examples of two-dimensional flow in fields, hillslopes, boreholes, and capillary fringes using HYDRUS (2D/3D). It demonstrates the use of two other software packages, RETC and STANMOD, that complement the HYDRUS series.

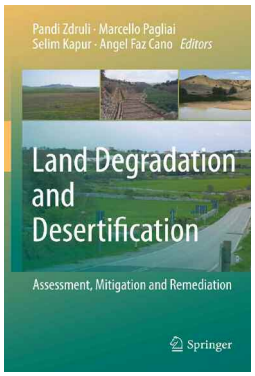


Notes from the Ground: Science, Soil, and Society in the American Countryside. Benjamin R. Cohen. Yale University Press, 2009 - Technology & Engineering. 272 pages. Notes from the Ground examines the cultural conditions that brought agriculture and science together in nineteenth-century America. Integrating the history of science, environmental history, and science studies, the book shows how and why agrarian Americans—yeoman farmers, gentleman planters, politicians, and policy makers alike—accepted, resisted, and shaped scientific ways of knowing the land. By detailing the changing perceptions of soil treatment, Benjamin Cohen shows that the credibility of new soil practices grew not from the arrival of professional chemists, but out of an existing ideology of work, knowledge, and citizenship.

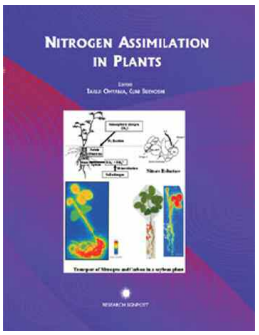


Soil Atlas of the Northern Circumpolar Region. Catalogue Number: LB-NA-23499-EN-C. ISBN: 978-92-79-09770-6, ISSN: 1018-5593. Euro 25. The atlas describes the origin and major characteristics of the different soil types that can be found in this environment. The atlas discusses the possible impacts of climate change on permafrost-affected soils and explains the critical role that they play in the global climate and global carbon cycles. The distribution of soil types for the entire northern circumpolar region can be visualised in a comprehensible manner by the lay-person. Information on the major soil types is presented in detail on twenty six map plates (the atlas has an A3 page size giving a dramatic A2 spread for maps). In a novel exercise, the World Reference Base for Soil Resources has been used as a framework for correlating knowledge from diverse

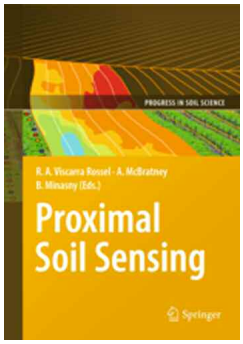
national soil classification systems into a single, coherent, inter-continental product. The atlas illustrates the diversity of soil in the permafrost and seasonally frozen environments through a series of maps supported by explanatory and easily readable texts, high quality photographs and descriptive graphics. The atlas presents the reader with a series of maps that show the variation of soil properties in a circumpolar context and from a polar perspective, allowing comparisons to be made across international boundaries. In addition, larger scale maps show the distribution of major soil types by regions with descriptions of the major issues. http://eusoils.jrc.ec.europa.eu/library/maps/Circumpolar/Download.cfm



Land Degradation and Desertification: Assessment, Mitigation and Remediation. Pandi Zdruli, Marcello Pagliai, Selim Kapur, and Angel Faz Cano (Eds.). Springer, 2010. 490 pp. ISBN: 978-90-481-8656-3. Price: $179.00. This book reports research results in sustainable land management and land degradation status and mitigation in 36 countries around the world. It includes background papers with continental and international perspectives dealing with land degradation and desertification studies. It assembles various topics of interest for a large audience. They include carbon sequestration and stocks, modern techniques to trace the trends of land degradation, traditional and modern approaches of resource-base conservation, soil fertility management, reforestation, rangeland rehabilitation, land use planning, GIS techniques in desertification risk cartography, participatory ecosystem management, policy analyses and possible plans for action. Various climatic domains in Africa, Asia, Europe and The Americas are covered. The book will be of interest to a variety of environmental scientists, agronomists, national and international policy makers and a number of organizations dealing with sustainable management of natural resources. More on *http://springer.com/978-90-481-8656-3*

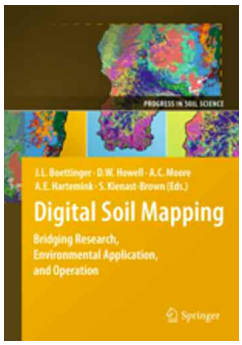


Nitrogen Assimilation in Plants. Takuji Ohyama and Kuni Sueyoshi (Editors). ISBN: 978-81-308-0406-4. Hardcover, 378 pages. Research Signpost, July 2010 US$ 165. In 20th century, the increase in crop production supported the world population mainly by the use of chemical nitrogen fertilizers. However, the production of nitrogen fertilizer requires a large amount of fossil fuels, and the excess or inappropriate use of chemical nitrogen fertilizers caused environmental problems such as nitrate accumulation in ground water, eutrophication of lakes, rivers, and oceans, as well as emissions of global warming gases. This book includes “Chapter 1: Nitrogen Nutrition in Plants and its Availability from Soil”, “Chapter 2: Nitrogen Absorption in Plants”, “Chapter 3: Nitrate Reduction”, “Chapter 4: Nitrogen Fixation”, and Chapter 5: Nitrogen Metabolism and Assimilation in Plants”. This book will provide many aspects of nitrogen assimilation in plants, including biochemistry, metabolism, transport, and crop phsiology.

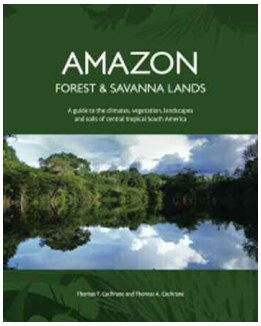


Proximal Soil Sensing. Progress in Soil Science, Vol. 1. Edited by: Viscarra Rossel, Raphael A.; McBratney, Alex B.; Minasny, Budiman. Springer, 2010, 468 p. Hardcover. ISBN: 978-90-481-8858-1. This book reports on developments in Proximal Soil Sensing (PSS) and high resolution digital soil mapping. PSS has become a multidisciplinary area of study that aims to develop field-based techniques for collecting information on the soil from close by, or within, the soil. Amongst others, PSS involves the use of optical, geophysical, electrochemical, mathematical and statistical methods. This volume, suitable for undergraduate course material and postgraduate research, brings together ideas and examples from those developing and using proximal sensors and high resolution digital soil maps for applications such as precision agriculture, soil contamination, archaeology, peri-urban design and high land-value applications, where there is a particular need for high spatial resolution information. The book in particular covers soil sensor sampling, proximal soil

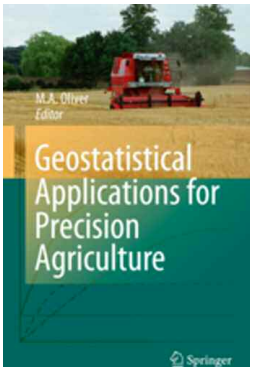
sensor development and use, sensor calibrations, prediction methods for large data sets, applications of proximal soil sensing, and high-resolution digital soil mapping.



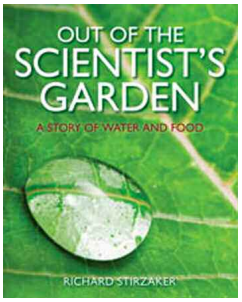
Digital Soil Mapping - Bridging Research, Environmental Application, and Operation. Progress in Soil Science, Vol. 2. Edited by: Boettinger, J.L.; Howell, D.W.; Moore, A.C.; Hartemink, A.E.; Kienast-Brown, S. Springer, 2010, 473 p. Hardcover. ISBN: 978-90-481-8862-8. Digital Soil Mapping is the creation and the population of a geographically referenced soil database. It is generated at a given resolution by using field and laboratory observation methods coupled with environmental data through quantitative relationships. Digital soil mapping is advancing on different fronts at different rates all across the world. This book presents the state-of-the art and explores strategies for bridging research, production, and environmental application of digital soil mapping.It includes examples from North America, South America, Europe, Asia, and Australia. The chapters address the following topics: - exploring new environmental covariates and sampling schemes - using integrated sensors to infer soil properties or status - innovative inference systems predicting soil classes, properties, and estimating their uncertainties - using digital soil mapping and techniques for soil assessment and environmental application - evaluating and using legacy soil data - protocol and capacity building for making digital soil mapping operational around the globe.



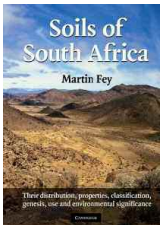
Amazon Forest and Savanna Lands. -A guide to the climates, vegetation, landscapes and soils of central Tropical South America. By Thomas T. Cochrane and Thomas A. Cochrane. ISBN 1452866376. 190 pp. This book provides an overview of the land resources of the Amazon in terms of the complex of climates, landscapes, vegetation and soils found throughout this vast, often misunderstood region. Section 1 is an updated sequel to the pioneering digital Land Systems study of the region carried by the senior author between 1976 and 1980. The authors have re-digitized that study as a Personal Computer Version with Database available free from their Web site. Section 2 summarizes 3 larger-scale Land Resource Studies of critical areas of Amazonia, "The Geo-economic Region of Brasilia", "The Northern Amazon Region of Bolivia", and "The Western Amazon State of Rondonia, Brazil". Section 3 summarizes a series of findings from the land resource studies in the Amazon, including discussions of climate, deforestation, the ¨"Paradox of Savannas in Amazonia" and "Leaching losses and the improvement of Amazon Forest and Savanna soils". The main text is complemented with an extensive Appendix which, amongst other subjects summarizes the authors' statistical procedure to enhance soil survey studies to help predict fertilizer needs, some novel analytical procedures, and other technologies.



Geostatistical Applications for Precision Agriculture. By Oliver, M.A. (Ed.). Springer, 2010, V, 295 p., Hardcover. ISBN: 978-90-481-9132-1. This book brings together in one place two dynamic subjects, precision agriculture and geostatistics, that have spatial variation at their core. Geostatistics is applied in precision agriculture (PA) to sampling, prediction, mapping, decision-making, economics, designed experiments, variable-rate applications and so on. Contributions from experts in both fields illustrate how geostatistics can and has been used to advantage with PA data such as yield, soil, crop, pests, aerial photograph, remote and proximal imagery. Geostatistical techniques include variography, ordinary-, disjunctive-, factorial-, indicator-, regression-, simple-, space-time- and co-kriging, and geostatistical simulation. The link between geostatistics and PA will increase as more intensive information on the soil and crops becomes available from sensors and on-the-go technology. This is not a recipe book, but is intended to guide readers in the use of appropriate techniques for the types of data and needs of the farmer in managing the land.

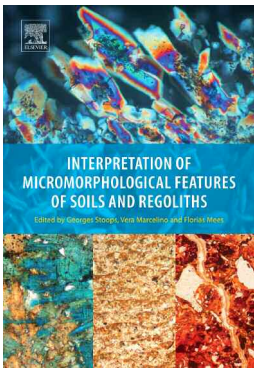


Out of the Scientist's Garden. A Story of Water and Food. By Richard Stirzaker. CSIRO Land and Water, 2010. 208 pages. Paperback - ISBN: 9780643096585 - AU $ 29.95. Gives an in-depth understanding on how plants and soil work using stories more than the language of science. It is not a 'how to' book, but a framework over which to lay your own experience, to learn and reflect. Information for gardeners on the challenge of growing food and feeding a family in the city. Covers plants, soil and rivers and the journey from hunter-gatherer to modern agriculture. Reflects on the way scientists conduct their craft. A book for anyone interested in food, how it is grown and how the world feeds itself. Out of the Scientist's Garden is written for anyone who wants to understand food and water a little better - for those growing vegetables in a garden, food in a subsistence plot or crops on vast irrigated plains. It is also for anyone who has never grown anything before but has wondered how we will feed a growing population in a world of shrinking resources. Although a practising scientist in the field of water and agriculture, the author has written, in story form accessible to a wide audience, about the drama of how the world feeds itself. The book starts in his own fruit and vegetable garden, exploring the 'how and why' questions about the way things grow, before moving on to stories about soil, rivers, aquifers and irrigation. The book closes with a brief history of agriculture, how the world feeds itself today and how to think through some of the big conundrums of modern food production.



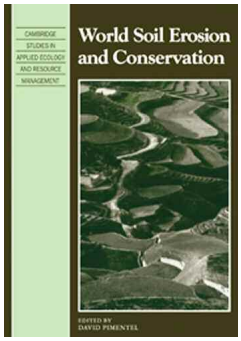
Soils of South Africa. By Martin Fey. Cambridge University Press, Cape Town, 2010. 287 pp. ISBN 9781107000506. Soils of South Africa is the first book in seventy years that provides a comprehensive account of South African soils. The book arranges more than seventy soil forms into fourteen groups and then provides, for each group: maps showing their distribution and abundance throughout South Africa; descriptions of morphological, chemical and physical properties; a detailed account of classification and its correlation with international systems; a discussion of soil genesis which includes a review of relevant research papers; appraisal of soil quality from a land use perspective as well as for its ecological significance; illustrative examples of soil profiles with analytical data and accompanying interpretations. There is also a fascinating account of the special relationship that exists between South African animals and soil environments. Soils of South Africa should interest students and researchers in the earth, environmental and biological sciences, as well as environmental practitioners, farmers, foresters and civil engineers.

European Atlas of Soil Biodiversity. Catalogue Number: LB-NA-24375-EN-C. ISBN: 978-92-79-15806-3, ISSN: 1018-5593. Price: Euro 25.00 The European Atlas of Soil Biodiversity provides a comprehensive source of information for researchers, policy makers and teachers, and a contribution to the International Year of Biodiversity. It selects and ranks potential threats to soil biodiversity, including land use change, habitat disruption, intensive human exploitation, invasive species, soil compaction, erosion and pollution. The map provides an evaluation of the potential risk of soil biodiversity decline with respect to the current situation, showing that the risk of decline in soil biodiversity due to human-induced pressures tends to be highest in areas of high population density and/or intense agricultural activity. The 128-page atlas is the result of collaboration between the European Commission, partners from academia and industry, the UN Food and Agriculture Organization (FAO) and the Convention on Biological Diversity (CBD).



Interpretation of Micromorphological Features of Soils and Regoliths. Edited by: Georges Stoops, Vera Marcelino, and Florias Mees. Academic Press, 2010. 800 pp. ISBN: 9780444531568. Covers the microscopic study of undisturbed soil and regolith samples, making use especially of thin sections and petrographic techniques. Incorporates more than 2,600 different references. Features contributions from 46 experts in the field. Micromorphology is a discipline used in several fields, such as pedology, quaternary geology, sedimentology, and archaeology. This book provides

these researchers the state of the art in the field of genetic interpretation of micromorphological features, with coverage extending to processes of soil material formation, weathering, regoliths, as well as the results of human activities. The books is for: Postgraduate students and researchers in the fields of pedogenesis, soil classification, quaternary geology, sedimentology and archaeology.



World Soil Erosion and Conservation. Series: Cambridge Studies in Applied Ecology and Resource Management. Edited by David Pimentel. Cambridge University Press, 2009 Paperback. ISBN-13: 9780521104715. Land degradation from soil erosion has been considered by many to be a problem of significant proportion, affecting some 30–50% of the earth's land surface. At the time of the first publication of this book in 1993, estimates indicated that 10–15 million hectares of land were being lost each year through erosion and salinisation from irrigation and that at such a rate of loss, topsoil reserves on most sloping lands would be depleted within two hundred years. Since humankind's dependency on the land for food is almost total, soil erosion represents a real threat to the security of our food supply. The need for the immediate conservation of the world's soil resources is therefore clear. As part of the response to this need, the International Union for the Conservation of Nature's Commission on Ecology convened a special working group to consider the problem of world soil erosion and to propose practical solutions for soil conservation. This important book presents the outcome of their work.

Regolith Science. Edited by Scott, Keith; Pain, Colin. Springer, jointly published with CSIRO, Australia. 2009, 462 pp. Hardcover. ISBN: 978-1-4020-8859-9. This comprehensive reference on the fundamentals of regolith science describes how regolith is developed from parental rocks and emphasises the importance of chemical, physical, water and biological processes in regolith formation. It provides details for mapping regolith landforms, as well as objective information on applications in mineral exploration and natural resource management. Regolith Science also provides a concise history of weathering through time in Australia. It includes previously unpublished information on elemental abundances in regolith materials along with detailed information on soil degradation processes such as in acid sulfate soils. Written by experts in the field, Regolith Science summarises research carried out over a 13 year period within the Cooperative Research Council for Landscape Environments and Mineral Exploration. This book will be a valuable resource for scientists and graduate/postgraduate students in geology, geography and soil science, and for professionals in the exploration industry and natural resources management.

IUSS Honorary members

Year	Member	Country
1924	L. Cayeux †	France
	K. Glinka †	USSR
	Jos. Kopecky †	Czechoslovakia
	E. Ramann †	Germany
	Sir John Russell †	UK
	S. Winogradski †	USSR
1927	P. Treitz †	Hungary
1935	E.A. Mitscherlich †	Germany
	A. d'Sigmond †	Hungary
	J. Stoklasa †	Czechoslovakia
	G. Wiegner †	Switzerland
1950	A. Demolon †	France
	D.J. Hissink †	Netherlands
	W.P. Kelley †	USA
1954	S. Mattson †	Sweden
	E. Truog †	USA
1956	G. Bertrand †	France
	E.C.J. Mohr †	Netherlands
1960	F.A. Bear †	USA
1964	J.A. Prescott †	Australia
1968	F. Hardy †	UK
	W.L. Kubiena †	Germany
	L.A. Richards †	USA
	A.A. Rode †	USSR
1974	R. Bradfield †	USA
	G.V. Jacks †	UK
	Ch.E. Kellogg †	USA
	M.K. Kononova †	USSR
	A. Oudin †	France
	F. Scheffer †	Germany
1978	G. Barbier †	France
	V. Ignatieff †	Canada
	Y. Ishizuka †	Japan
	L. Krolikowski †	Poland
	L. Vettori †	Brazil
1982	Ph. Duchaufour †	France
	W. Flaig †	Germany
	V. Kovda †	USSR
	E. Mueckenhausen †	Germany
	E.W. Russell †	UK
1986	H. Jenny †	USA
	D. Kirkham †	USA
	S.K. Mukherjee †	India
	R. Tavernier †	Belgium

Year	Member	Country
1990	G. Aubert †	France
	E.G. Hallsworth †	Australia
	J.S. Kanwar	India
	P. Schachtschabel †	Germany
	R.W. Simonson †	USA
	I. Szabolcs †	Hungary
1998	G. H. Bolt	Netherlands
	R. Dudal	Belgium
	K.H. Hartge	Germany
	M. Kutilek	Czech Rep.
	J. Quirk	Australia
	W.G. Sombroek †	Netherlands
	K. Wada	Japan
	D.H. Yaalon	Israel
	S.V. Zonn †	Russia
2002	R.W. Arnold	USA
	G.V. Dobrovolsky	Russia
	W. Gardner	USA
	H.M. Hamdi †	Egypt
	L.A.L. Sarmiento	Colombia
	F. Mancini	Italy
	B.S. Nosko	Ukraine
	R. Rosell	Argentina
	A. Ruellan	France
	A. Tanaka	Japan
	P.B.H Tinker	UK
2006	W.E.H. Blum	Austria
	H-P. Blume	Germany
	J. Bouma	Netherlands
	S-J. Cho	South Korea
	J. Glinski	Poland
	M.G.H. Jamagne	France
	D.R. Nielsen	USA
	J.H.V. van Baren †	Netherlands
	L.P. Wilding	USA
2010	C. Feller	France
	K. Kumazawa	Japan
	K. Kyuma	Japan
	J. Ryan	Syria
	B.A. Stewart	USA
	V. Targulian	Russia
	G. Varallyay	Hungary
	J.S.P. Yadav †	India