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Newsletter

Contents

EGU Symposium	1
Newsletter Editor Needed	1
Photos Wanted for SSH Profiles in History	2
German Tropical Research at Amani	3
Soil Survey in the British Overseas Territories	5
75 Years of SSSA	12
2011 SSSA Symposium Abstracts	17
German History of Soil Science Working Group	23
Journal News	23
New Historical, Philosophical, or Sociological Articles	25
Historical Presentation	27
2012 SSSA Meeting Plans	27
Eurosoil 2012	27
News Items Wanted	27
IUSS 4.5 and SSSA 205.1 officers	28

"Soil Science Through History" Symposium at the European Geosciences Union Meeting

A symposium devoted to the theme "Soil Science Through History" will be held at the 2012 European Geosciences meeting in Vienna, Austria from April 22-27. The symposium is open to all aspects of soil science history, including the history of soil science in various countries, the history of soil science societies, major ideas and advances in soil science, important international exchanges through history, and historical soil scientists. Abstracts can be submitted by going to http://meetings.copernicus.org/egu2012/home.html. This session is found under the "General Soil Science" heading, session SSS1.2. The deadline for abstract submission is 17 January 2012, at 24:00 CET. Any questions about the session can be directed to the conveners: Eric Brevik at Eric.Brevik@dickinsonstate.edu or Alfred Hartemink at hartemink@wisc.edu.

Soil History Newsletter Editor Needed

After five years of editing this newsletter, it is time to give someone else the opportunity to reach out to the soil science history, philosophy, and sociology community each year. Therefore, this will be Eric Brevik's final newsletter as the editor, although Eric is willing to help the new editor out next year as the new editor learns how the structuring of the newsletter works. Eric also has files to share that may the editing job easier. If you are interested in serving as the newsletter editor, please contact Jock Churchman at jock.churchman@adelaide.edu.au.

Photos Wanted for Soil Horizons Profiles in History

The Soil Science Society of America journal Soil Horizons is running a "Profiles in History" feature in each issue. The idea behind "Profiles in History" is to publish a photograph or figure that is significant in the history of soil science along with a short 2-4 sentence explanation of the picture or figure.

Submissions are welcomed from anyone with a relevant picture or figure. Soil Survey Horizons will publish color pictures or figures, and there is no cost for publication. Pictures do not have to be from the United States; international pictures are welcome. To submit a picture or figure, please send a high-quality jpeg or tiff file and a brief explanation of the figure to Sam Indorante at Sam.Indorante@il.usda.gov or Tom Sauer at Tom.Sauer@ARS.USDA.GOV.

The following are examples of items that have been published in the "Profiles in History" feature:

Many soils workshops were held around the world in an effort to improve soils knowledge and Soil Taxonomy. However, working in exotic locations came with a price! Here, Ernest Schlichting (Germany, left) and Ben Hajek (Auburn University, right) react after receiving inoculations before going into the Brazilian interior for the Eighth International Soil Classification Workshop on Oxisols (ICOMOX), 1986. (Photo courtesy of Stan Buol).

Dr. F. DeConinck, retired from the Geological Institute in Ghent, Belgium, examines a soil profile at the July 2001 International Working Meeting on Micropedology in Belgium. Dr. DeConinck is world-renowned for his work on Spodosols.

Articles

Start and abrupt end of the first German Tropical Research Station (Amani)

Arnold Finck; Prof. Emeritus at Kiel University, Germany, 2011 (formerly Soil Chemist in the Sudan)

My tropical research career started as a soil chemist in 1958 in the Sudan at the Gezira Research Station (GRS). It was founded for the large irrigation scheme of cotton on the Blue Nile by the British Colonial Administration in 1925. Even after independence of the Sudan (1956) the GRS followed established research practice and I was lucky to participate with my studies on soil fertility and cotton nutrition. Working in the tradition of the British Colonial Service, it was a surprise when I discovered (on a trip to Central Africa 1961) the story of the Amani Station in a hotel library near Kilimanjaro. This short essay is a reminiscence of the early, but only short-lived, German tropical agricultural research station.

Colonies and their advantages: It may be useful to start with some general remarks on colonization. Africa about 1880 was largely divided into colonies by the great European powers, especially Britain and France. In contrast Germany, being more engaged with its unification and rise, acquired some colonies only as late as from 1885 onwards – mainly at the initiative of growing industry and expanding commerce.

What were the advantages of colonies for Europeans? Agriculture in the warm climate could supply additional food like fruits and sugar, stimulants like coffee and cocoa, many spices, and further important industrial raw materials (fibers, rubber etc.). In order to improve the traditional poor-yielding cropping practices, special research stations were established by the British and French Colonial Services in Africa. The prototype for these was the Pasuruan Sugar Station of the Netherlands, founded in Java in 1880. The goal of modern scientific research was more efficient crop production in the tropical climate and on tropical soils. The German government wanted to keep up and decided to establish a station in its colony of East Africa in about 1900.

Amani Station (the story found in 1961): The botanist Prof. Zimmermann arrived at the port of Tanga, East Africa, in 1902 from Berlin. Together with his staff he walked westwards into the highlands of the Usambara Mountains. Under instructions of the *German East African Society*, he was searching for a suitable place for a "Biological and Agricultural Institute" and also for a large Botanical Garden. Near the village of Amani (meaning "peace"), about 80 km from Tanga and 900 meters above sea level, he obtained 300 hectares of forest land. The jungle was cleared and the fields prepared. The stones for the foundations of the houses were taken from the river. The wood for house construction, however, was imported from Germany. First, a tree nursery was set up, later coffee-trees were planted and sisal (fibre) plantations established. Agronomic research with several different tropical crops soon began on the experimental fields.

The journal "Der Pflanzer" (*The Planter*) served for the communication of acquired scientific knowledge among the few German and many native farmers. Surprisingly, although this station was really Zimmermann's creation, another director was appointed – consequences of intrigues in Berlin regarding Africa. It seems that medical research on tropical diseases gained priority for some years.

Only later did Zimmermann become director of the station again. Until 1913/14 the research work was in full swing with field experiments and modern laboratory analysis. It attracted many experts and farmers as visitors and was a busy and lovely place.

British people, too, liked to visit this informative and hospitable station. It seemed to have a great and bright future. History took a different course, however, because the World War caused an abrupt end to the station in 1914. [A personal remark may be added: the great European War had its main cause not really in the terroristic act of killing the Austrian crown-prince during his visit of *Serajewo*, but in German-French hereditary quarrels and in the industrial and political rivalry between Germany and Britain].

Anyhow, in East Africa the British troops were first strongly defeated near Tanga and did not recover for some time. But in 1916 they slowly marched along the railroad towards the Usambara mountains. Attached to the British troops, there was an officer of the intelligence service who formerly had been a missionary in the Usambara area. He took a short-cut across the forest to Amani Station, together with six Indian soldiers.

Amani Station, in the meantime, had become a refugee camp for German settlers, heavily guarded against the approaching enemy. When an officer, in British uniform and with his bodyguard, did arrive, he was stopped at the security gate. Some of the native soldiers, however, knew him as a (former) friendly pater-missionary – and let him pass through into the Station.
Director Zimmermann, on this evening sitting on the veranda, was astonished at the sudden appearance of a British officer with his bodyguard. The encounter reminds one of the famous meeting of the African explorer Stanley with Livingstone (45 years ago):

> # Pater (now officer): *Professor Zimmermann, I suppose?*
> # Prof. Zimmermann: *That's correct, but how did you come here?*
> # Officer: *I marched from Monga; and now I take possession of Amani Station in the name of Her British Majesty!*

British rule: Amani fell into "British hands" without any fight. The occupying troops had strict orders to maintain the station. It was quickly transformed into a place to manufacture important war products like quinine (Chinin, against Malaria), chocolate, and last but not least, thousands of bottles of whiskey substitute. After the war (1919) the Germans were sent home. The new (English) director, however, had no means to continue the tropical research work. Thus, the Station was closed in 1923. Amani Station had been active for less than two decades and collapsed without destruction. Many years later it was partly re-activated by the new state of Tanzania.

Some Related Literature:
[Author ?]: Deutsche Forschung (German Research) at Amani Station; Story found in a Journal at the Kibo-hotel near Marangu, Kilimanjaro, 1961 [original copy unfortunately lost].
Finck, Arnold: Lehr- und Wanderjahre (including the memoirs of my African travels). Kiel, 1993
Finck, Arnold: Vienna around 1900 – Ideas and Experiences change the World [Causes of the World War]. (English summary of lecture in German), 2010.

Soil Survey in the British Overseas Territories

Anthony Young, University of East Anglia, Norwich UK

Before World War II the British Commonwealth (formerly known as the British Empire) comprised a world-wide network of some 60 countries. The developed nations, Canada, South Africa, Australia, and New Zealand, had their own, large and excellent, soil survey organizations. The remaining countries were governed largely by officers of the British Colonial Service. Most became independent between 1956 and 1975. All were among the least developed (a euphemism of 'poorest') nations, and most were largely dependent on agriculture.

This account refers to these latter territories. For the convenience of readers I use the modern names of countries, adding the pre-independence names on first mention.

The pioneers (1920-1939)

In the inter-war period, 1918-1939, a small number of remarkable men made a few early national reconnaissance soil surveys. Outstanding among these pioneers were Arthur Hornby in Malawi (formerly Nyasaland), Geoffrey Milne in Tanzania (Tanganyika and Zanzibar), Colin Trapnell in Zambia (Northern Rhodesia) (Figure 1), and Frederick Hardy in Trinidad. There was but one professional soil surveyor of local origin, A. W. R. Joachim, who conducted local surveys in Sri Lanka (Ceylon), combining them into a national soil map. In Sudan, the great Gezira Research Station started as a programme of mapping for irrigation development, using grid-based sampling.

Figure 1. Colin Trapnell, Zambia,1938

Most of the pioneers had been appointed to posts of Soil Chemist,[1] presumed to conduct soil analyses for fertilizer recommendations. They realized, however, that this was an inefficient approach unless based on a set of identified and mapped soil units. Without air photographs these pioneers were dependent on field traverses, yet managed to map the distributions of the main soil types with what, in the light of present knowledge, was remarkable accuracy.

Basis for post-war developments

The great leap forward came from 1950 onwards. Three elements contributed to this: attitudes, institutional developments, and technical advances. With attitudes, there was a post-war concern for world food supplies, coupled with realization of the need to develop third world countries. Institutional development began in Britain with the Colonial Development and Welfare Act

[1] Trapnell was an Ecologist.

(1945). This led to a rapid expansion of staffing in the Colonial Service, from 4400 pre-war to 11000 by 1947.

The major technical advance was the use of air photographs. These had proved valuable in wartime military reconnaissance, and the same was found to apply to soil survey. It was embodied in the land systems approach, developed primarily by CSIRO Australia. Basically, the surveys identified units of the physical environment, based primarily on landforms and vegetation which could be distinguished on the photos. The soils found within each unit were then established in the field. At national, or reconnaissance, scales, even if the results were presented as 'soil maps', these generally represented the environment as a whole.

Three institutions were responsible for soil surveys: Colonial Departments of Agriculture, the Land Resources Development Centre, and consultant companies.

The Golden Age: 1950-1975

Which countries began the rapid expansion of soil survey in British colonial territories? Ghana (the Gold Coast) and Uganda were among the earliest. A few examples will be given here to illustrate the general sequence of developments. A comprehensive account is given in the author's book listed at the end of this note.

Ghana (The Gold Coast) benefited from the appointment of C. F. Charter as head of a newly created Soil Survey division in 1948 (Figure 2). Charter possessed two outstanding abilities. One was a deep knowledge of tropical soils. The other was a notable capacity to persuade his superiors of the need for staff, and to recruit surveyors who proved to be of outstanding ability. Among those appointed in the early 1950s were Hugh Brammer (Figure 2), at the time of writing the greatest living soil surveyor, Peter Ahn, later to become Professor of Soil Science at the University of Ghana, and Maurice Purnell, who went on to develop and lead the science of land evaluation for FAO.

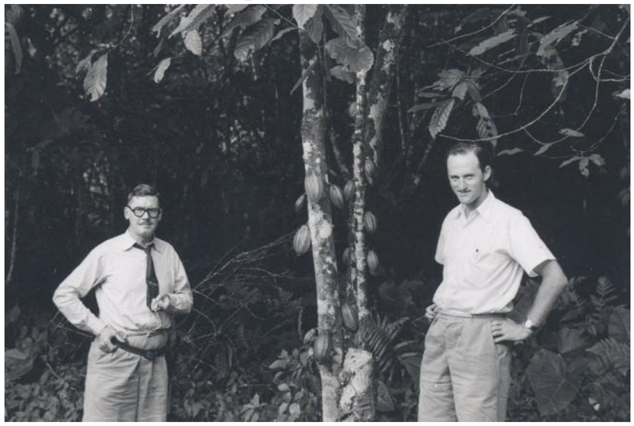

Figure 2. Three great characters in the history of tropical soil science: C. F. Charter, Hugh Brammer, and a cocoa tree, Ghana, 1952.

Remarkably, he also appointed Helen Brash. I say 'remarkably' because Charter was not just an anti-feminist, he did not even like his surveyors to be family men, "A married surveyor is half a surveyor" he was heard to say. The reason for her appointment was probably because Hugh Brammer proved to be such an able, hard-working and totally dedicated man and he had been a Cambridge graduate in Geography. As a result of this experience, Charter appeared to develop a bias towards geographers from Britain's oldest universities, Oxford and

Cambridge. Be that as it may, Helen Brash became the only woman soil surveyor in the British Colonial Service.[2]

Uganda was the first to have staff members designated as Soil Surveyors, and the first country to complete a national reconnaissance soil survey. Credit for this must go to the Chief Research Officer, Ernest Chenery, who foresaw the need to survey the agricultural resources of the country, secured funding, appointed staff, and remained to see results from the project within six years, 1956-62. His original concept was to have three surveys, of soils, ecology, and farming systems, although the last of these was not completed.

Figure 3. Cliff Ollier explains the purpose of soil survey to the Karamajong, Uganda, 1960

Three Soil Surveyors took up posts in 1956: Cliff Ollier (Figure 3), John Harrop and Stanislav Radwanski. Arriving first, Ollier took charge, and by mutual agreement they divided up the country. "I worked out the area to be covered, the length of roads, and calculated that they could afford to make an observation only every four miles, with special traverses in significant areas. John and Stan seemed happy to carry on the same way." The results were published as maps at 1:500 000, a smaller scale than most reconnaissance surveys, but one which allowed the work to be rapidly completed.

Malaysia (Malaya)[3] moved from expatriate British to staff of local origin earlier than many territories. John Coulter was Soil Scientist, and later Director of Agricultural Research, 1958-59. Like a number of those in this account he went on to an international career, as the only soil scientist in the World Bank. The first Soil Surveyor was William Panton, appointed in 1953. Bill Panton devoted nearly the whole of a long career to Malaya (and married into the family of a Sultanate).[4] Through a survey of Trengannu he set going a national reconnaissance survey organized by the component States, extending from 1958-70. The authors of these maps and memoirs include four British expatriates and five Malaysians belonging to the local Chinese community. The first local Soil Surveyors were Law Wei Min, appointed 1962, and Ignatius Wong.

A noteworthy feature of survey in Malaya was the link with soil fertility and management. This had been started by Coulter, and gained Momentum when Ng Siew Kee, as Head of the Soil Science Division, attended a conference in New Zealand in 1962, passing on his enthusiasm to his colleague. This led to a joint aid project, spearheaded by Michael Leamy, seconded from the

[2] When she married that was too much for Charter. Helen Sandison became a geography teacher, first in the Gold Coast then in UK, where she still lives.

[3] Modern Malaysia comprises the former Malaya, Sarawak, and Sabah.

[4] At the time of my research, Panton was believed to be still alive, but I failed to get in touch with him. If anyone knows of his later years, would they please contact me?

New Zealand Survey. The mapping had been based on Soil Series, far more broadly defined than is the case in the US and UK. Since most of the country is hot and wet, the Series were largely linked to the underlying geology. By 1968, when I arrived in the country to conduct a survey for a land settlement scheme, not only were management and fertilizer recommendations available for each Series but managers of estates, e.g. for oil palm and rubber, were aware of what Soil Series were found on their land, not a situation often encountered.

The West Indies, although consisting of many separate nations both before and after independence, benefited from having a unified centre for agricultural studies. This was originally the Imperial College of Tropical Agriculture (ICTA), established in Trinidad in 1921 with the objective of training Agricultural Officers for the whole of the British Colonial Service. One of the founding staff was Fred Hardy, Professor of Soil Science, who was responsible for developing what I have called the "Hardy method of soil survey". Each university vacation he would go off to a different island and enquire about the basis of its economy (unfortunately often one crop). Supposing this was coconuts, he would say, "Take me to where your coconuts grow well, and also to some places where they were doing badly". Soil pits would be dug, and the soil properties responsible for the good and poor growth identified. Thus when these soils were mapped, the related information on crop performance was already known. I subsequently named the the 'Hardy approach to soil survey', although at the time it never gained popularity, giving way to the objective mapping of soil types, often poorly linked with agricultural performance data.

In 1948 ICTA became the Faculty of Agriculture of the newly-established University of the West Indies (UWI), and in 1954 this faculty was split. UWI retained responsibility for teaching, whilst research passed to a Regional Research Centre, headed by Alun Jones. This centre undertook a complete replacement of Hardy's early surveys (called the 'Grey Books') and from 1958-1971 completed surveys of Jamaica and the smaller islands, published as 26 maps and memoirs (the 'Green Books'). Unlike national reconnaissance surveys elsewhere, the smaller areas involved allowed work to be undertaken at detailed scales, mainly 1:25 000. These are model examples of the contribution which good surveys, given support from research and extension services, can make to agricultural development.

Malawi: a personal experience

Malawi (Nyasaland) is formed by a 900 km north-south strip of land along the lake of the same name, varying in width from 100-200 km. The population rose from 3 M in 1962 to some 15 M today. It is one of the worlds least developed (poorest) countries, with an economy heavily dependent on agriculture. Its history of soil survey illustrates how national surveys in such smaller countries were accomplished with never more than one professional member of staff.

Between the world wars this was Arthur Hornby. Appointed Agricultural Chemist in 1921, he soon perceived that conducting soil analyses for fertilizer advisory purposes was very inefficient unless based on soil mapping. He established a Soil Survey, staffed by himself, and issued a series of Soil Survey Bulletins from 1925. His crowning achievement was a *Soil Map of Central Nyasaland* (the modern Southern and part of Central Regions), produced in 1938. Given the sometimes shaky topographic base maps, and the fact that he worked entirely by field traverses, this is an astonishing map for its time, showing soil distributions in substantial accord with modern knowledge.

There were no soil survey staff for 12 years after WWII, although the Ecologist, George Jackson, self-taught in soils, conducted some small local studies. Systematic national survey resumed with the appointment of a Soil Surveyor. As this was Anthony Young, allow me to break into the first person.

After a 30-day voyage out by sea, the normal route for Colonial officers at the time, I arrived in the former capital, Zomba, shortly before Christmas 1958. A national State of Emergency, caused by pre-independence riots, followed, and with other staff whose function was not thought to be essential, was seconded to the Police. This episode over, a national reconnaissance survey was started in mid-1959. From then until 1962, the Soil Survey consisted of myself with African support staff: a Cartographer, three Field Assistants and a Driver (Figure 4).

Figure 4. The Soil Survey of Malawi as it was from 1958 to 1962.

The national reconnaissance survey was based on the land systems approach developed mainly by CSIRO Australia, in which the mapping units were based not just on soils but the whole physical environment. It was actually designated an Agro-Ecological Survey, with mapping units called Natural Regions and Areas; this never worried local staff, as they hadn't hear of land systems either.

Survey methods were standard for small-scale surveys. Boundaries were drawn on air photographs (Figure 5), in some areas dating from photography of 1948, sometimes difficult to position on the sketchy base maps. We then set off in the field, starting in the extreme north. Writing to the District Agricultural Officer, to explain what we were doing and arrange for accommodation in the local Government Rest House, we asked him to organize for soil pits to be dug on any sites of local fertilizer or crop variety trials. We then made traverses, by Land Rover, along every motorable track in the District, recording (on the move) landforms, vegetation, soil appearance and land use. Wherever there was a visible change in soils we stopped and either dug a pit or, thankfully, used a road cutting. This was for the most part standard land systems survey practice at the time.

Figure 5. Dr H. Kamuza Banda, shortly to become Life President of Malawi, visits the Soil Survey office, 1961.

An innovation came from the linking the mapped soil types with pre-existing agronomic performance data. A local Agronomist, Peter Brown, asked me to identify the soils on all field trial sites. He then put together the existing data on crop varieties, fertilizer treatments, yields and management problems, to produce a half-page or so of agricultural advisory information for each soil series. This was the reverse of the common procedure, in which soils were mapped first and the surveyors scratched their heads for information on agricultural potential, often given in somewhat superficial terms. I subsequently ran a campaign to encourage this technique of survey, which was essentially the approach pioneered by Hardy (see above).

In three years I finished the survey, maps and memoirs for the Northern and Central Regions. Some years later a map for the Southern Region was completed by Alan Stobbs, although the accompanying memoir never appeared.

Other institutions: The Land Resources Division and consultant companies

Most British Colonies achieved independence between 1956 and 1975. This was accompanied by a severe fall in soil survey activity and in agricultural extension services through the departure of expatriate civil servants. In some countries, Ghana and Kenya for example, local professional staff had been trained during the period of British rule and were able to take over. Many Soil Survey departments remained, but were severely starved of funding, and generally dependent on foreign aid projects.

The Land Resources Division[5] in part took over from Colonial departments. The Division rose from small beginnings in 1956 to become the finest tropical land resource survey organization in the world, at its peak bringing together a professional staff of eighty. Starting with inventory-type studies of soils, forests, and pastures, it went on to develop an integrated approach, linking resource survey with agriculture, forestry, etc., including socio-economic analysis. Between 1966 and 1987 it produced a series of 36 *Land Resource Studies*, which taken together constitute one of the greatest contributions to geographical knowledge produced by the UK. It is a matter of regret that this outstanding organization, which could have remained a leader in British overseas aid activities, was reduced in size and eventually abolished as a result of government funding cuts.

Spanning the Colonial and post-Colonial period were surveys by consultant companies, notably Hunting Technical Services (HTS) and Booker Agriculture. These were generally for developments financed by the World Bank, often irrigation projects. Some of these studies were on a massive scale; an archive of HTS reports occupies 100m of bookshelf, plus 20m with boxes of field observations on punched cards.

Achievements and limitations

By 1970 full coverage by reconnaissance land resource surveys had been completed for 20 of the 35 countries (counting the West Indies as one) in the British Commonwealth,[6] with partial coverage of a further four. National surveys of a further six countries, and partial areas of three, were completed in part after 1970. Some were called soil surveys, some land systems, but all

[5] This went through several changes of name.
[6] As in the rest of this account, I exclude the Dominions.

essentially were national inventories of the land resources for agriculture, forestry, and other forms of rural land use.

It must not be thought that work was confined to the reconnaissance scale. In parallel, nearly all national organizations produced a large number of semi-detailed surveys directed at specific development projects: irrigation schemes, land settlement projects, smallholder farming developments (e.g. for tea, oil palm, pineapples), together with detailed surveys for such purposes as agricultural experiment stations. Ghana, for example, lists 48 Technical Reports produced between 1954 and 1960.

The key is what use has been made of all these surveys. There have only been a few systematic studies of how surveys have been applied, all reporting disappointingly few concrete examples.

Some brief comments can be offered in terms of scales. The utility of *detailed surveys*, at 1:20 000 or larger scales, offers no problem. All were intended for specific local developments which either went ahead, with layout planned in part according to soil distribution, or occasionally were abandoned where land was found to be unsuitable.

Semi-detailed surveys, typically at 1:50 000, were usually made for specific development projects. Their applications were straightforward up to the point where the land use plan was completed and the decision to implement made. The existence of soil maps meant that hazardous land was excluded from treatment. Sometimes crop selection would be made on the basis of soils, e.g. in a Malaysian scheme, oil palm on the better soils, rubber on the poorer. Cocoa is a crop notably sensitive to soil conditions, and there is a whole literature on its soil requirements. For sugar cane, following one unfortunate experience, Booker Agriculture ruled that a soil survey must always be made before a new plantation was established.

With *reconnaissance surveys*, generally at 1:250 000, experience is variable. A cynical view sometimes heard is that they provided coloured maps to pin up on office walls. There are even reported cases where government officials did not know of their existence. More positively, such surveys can be, and sometimes have been, used for the following purposes:

- To provide guidance on where to find suitable land for specific types of development. For example in Malawi, an FAO officer engaged in project formulation wrote, "We made considerable use of the agro-ecological surveys...these were enormously valuable as they brought together so much information on soils and associated farming systems. In retrospect, I am encouraged by the fact that I still receive enquiries based on information in the surveys I conducted over 50 years ago.
- To provide a national framework of soil types. In particular, soil series defined during reconnaissance work were often taken over by local survey organizations as the basis for further surveys.
- To link agronomic research with development. There are a few examples of a network of trial sites being planned on the basis of mapped soil distributions. Agronomic data from such sites, or from experiment stations can, in principle, be extended to similar soils, although the extent to which this is done is well below its potential.

There can be no doubt, however, that the use made of soil surveys has been far below their potential. Ways in which this could, and should, be done include the following:

- **Soil management** Departments of Agriculture in developing countries should have staff called Soil Management Officers, or the like. These would be specialists, comparable with Entomologists and Plant Pathologists, to be called in by local extension staff when it appeared that a problem was or might be soil-based.
- **Project management** In development projects, it was customary for a soil survey to be done at the initial stage, and *then for the Soil Surveyors to go away*. This should not happen. The senior surveyor should remain throughout the design and implementation stages, on a equal footing with economists, etc.. Subsequently, a professional soils expert of local origin should remain on the project in a soil management capacity.
- **Soil monitoring** In 1991 I wrote an article, Soil monitoring: a basic task for soil survey organizations (*Soil Use and Management* 7:126-30). I argued that every national organization should have an ongoing programme of monitoring, for example to identify 'Hot spots' of land degradation, as a basis for remedial measures. Early reaction to this call was slow, but by now there are some active monitoring programmes in the developed world, and some limited internationally-based projects in tropical countries (GLASOD, LADA, etc.).

In place of References
This account is based on the author's book, *Thin on the Ground: Land Resource Survey in British Overseas Territories* (The Memoir Club, Durham, UK, 2007), which gives references to the examples discussed and to surveys in all developing countries of the Commonwealth. Being a small publisher, it is most easily obtained directly from their web site, www.thememoirclub.co.uk.

Most of the surveys referred to are held in the World Soil Survey Archive and Catalogue (WOSSAC) at Cranfield University, UK (www.wossac.com).

75 Years of the Soil Science Society of America

Eric C. Brevik, Dickinson State University, Dickinson, ND, USA

Introduction
November 18, 2011 marked 75 years of the Soil Science Society of America (SSSA). This brief history is part of a more extensive timeline that was developed as a part of SSSA's 75th anniversary celebrations. The complete timeline is published as Brevik (2011), and can be found at the SSSA website at https://www.soils.org/files/about-society/sssa-historical-highlights.pdf.

Membership
The membership is the lifeblood of any society. Without members there is no society, and SSSA is no exception. SSSA membership grew steadily from the founding of the Society in 1937 through the mid-1980s, with an all-time high membership of 6,402 in 1985 (Figure 1). SSSA fell on some relatively hard times through the 1990s, hitting a 25-year low in membership of 5,319 in 2002, a loss of over 1,000 members as compared to the 1985 high. From 2002 to 2010

membership numbers saw a recovery. With the exception of a sharp drop in 2009, the first year that Emeritus members were charged dues, membership has recovered to mid-1980s levels. The second and third highest membership numbers in Society history were realized in 2008 and 2010 with 6,389 and 6,367 members, respectively (Figure 1).

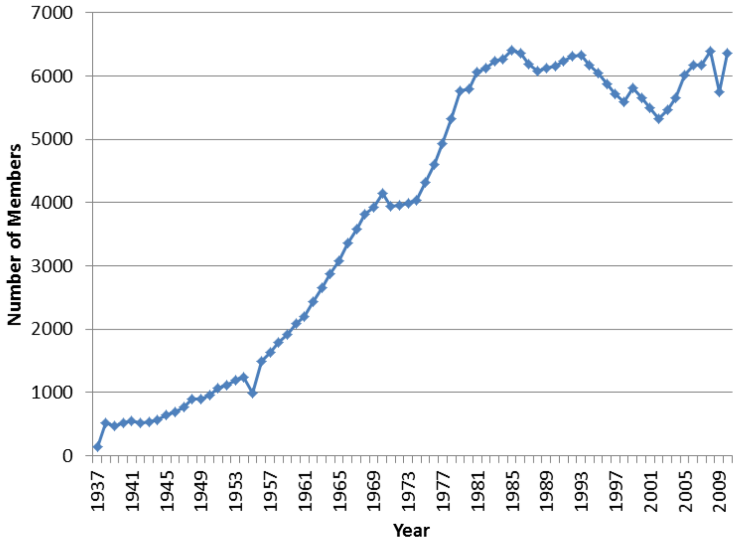

Figure 1. SSSA membership by year. Data from SSSA Headquarters.

Society Publications

SSSA provides significant service to its members and the broader soil science community through the publication of high quality journals, books, and other media that meet the needs of a wide range of soil scientists, including researchers, teachers, field scientists, and consultants. Five journals form the core of these publication efforts.

Soil Science Society of America Journal (SSSAJ)

Originally the *SSSA Proceedings*, the flagship journal of the Society has been published for the last 74 years. *SSSAJ* is widely recognized as one of the most respected soil science journals in the world. *SSSAJ* is one of two journals, along with *Soil Survey Horizons*, published exclusively by SSSA. Some basic statistics for publications in *SSSAJ* are given in Figures 2-4.

Soil Survey Horizons (SSH)

Published since 1960, *SSH* is SSSA's second oldest continuously published journal. SSH was started by Francis Hole to promote communication among field-oriented soil scientists. Today it continues to serve that role, and is also the primary publication outlet for consulting soil scientists within the Society. Some basic statistics for publications in *SSH* are given in Figures 2-4.

Journal of Environmental Quality (JEQ)

Published in cooperation with ASA and CSSA since 1972, *JEQ* gives SSSA a strong entry in the field of environmental publications. *JEQ* has undergone strong growth since its founding, and since the late 1990s has published articles at a rate similar to that of *SSSAJ*. Some basic statistics for publications in *JEQ* are given in Figures 2-4.

Journal of Natural Resources and Life Science Education (JNRLSE)
Also started in 1972, *JNRLSE* is published in cooperation with nine other professional societies. Written by educators for educators, *JNRLSE* is SSSA's outlet for the latest teaching ideas in natural resources, agriculture, and the life sciences. Some basic statistics for publications in *JNRLSE* are given in Figures 2-4.

Vadose Zone Journal (VZJ)
The newest of SSSA's journals, *VZJ* has been published as an online journal since 2002. The Geological Society of America cooperates with SSSA in the publication of *VZJ*. Some basic statistics for publications in *VZJ* are given in Figures 2-4.

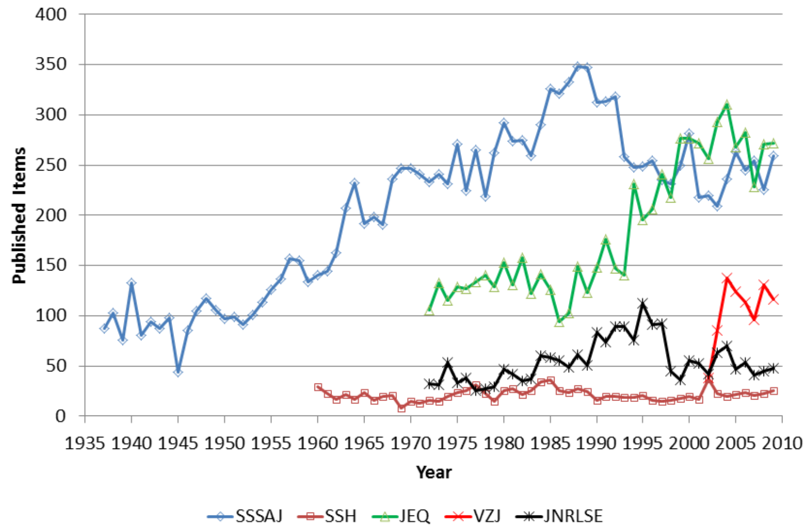

Figure 2. Published items by year for SSSA's journals. Data for *SSSAJ* and *JEQ* is from annual reports published in *SSSAJ*. Data for *SSH* is from https://www.soils.org/files/publications/soil-survey-horizons/soil-survey-horizons-index.pdf. Data for *VZJ* and *JNRLSE* is from annual reports published in *SSSAJ* and Headquarters Staff.

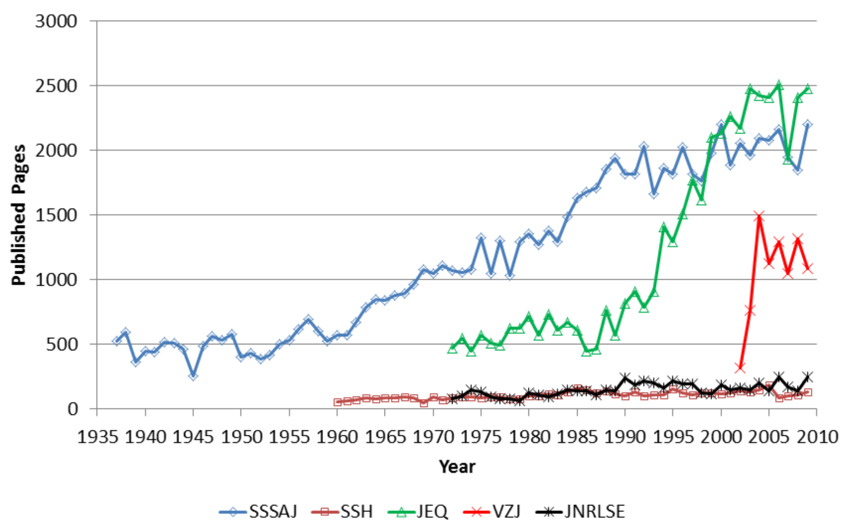

Figure 3. Total pages published by year for SSSA's journals. Data for *SSSAJ* and *JEQ* is from annual reports published in *SSSAJ*. Data for *SSH* is from https://www.soils.org/files/publications/soil-survey-horizons/soil-survey-horizons-index.pdf. Data for *VZJ* and *JNRLSE* is from annual reports published in *SSSAJ* and Headquarters Staff.

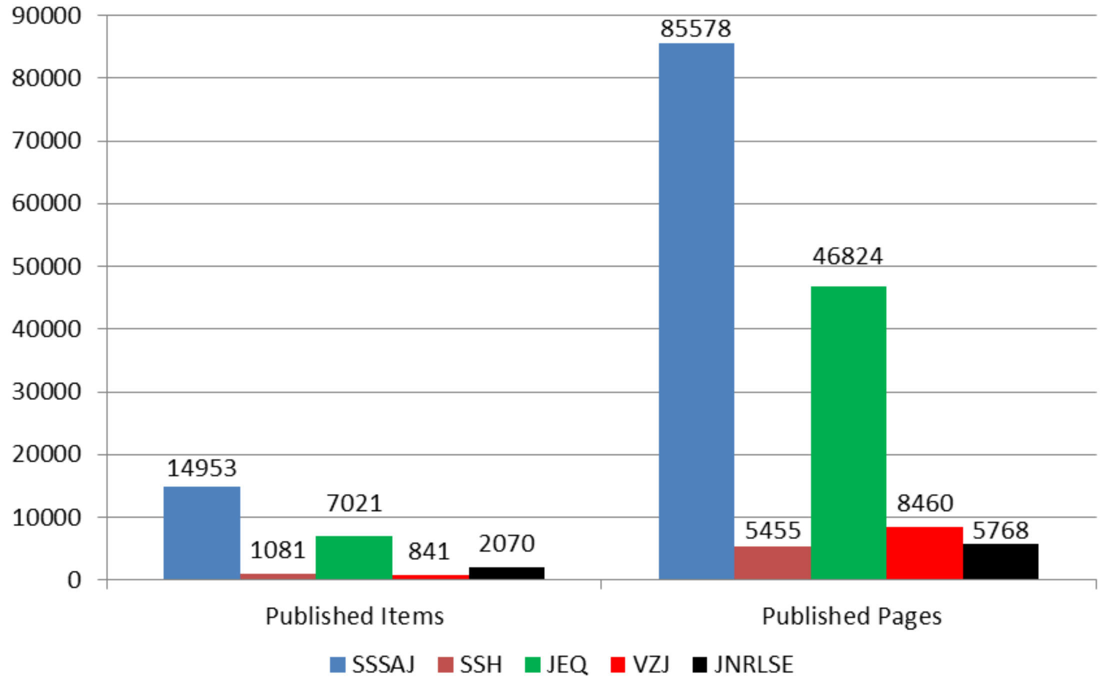

Figure 4. Total items and pages published for SSSA's journals from their original publication date through 2009. Data for *SSSAJ* and *JEQ* is from annual reports published in *SSSAJ*. Data for *SSH* is from https://www.soils.org/files/publications/soil-survey-horizons/soil-survey-horizons-index.pdf. Data for *VZJ* and *JNRLSE* is from annual reports published in *SSSAJ* and Headquarters Staff.

Net Worth

Providing member services in the modern world requires significant resources. Through income sources such as member dues, revenues from the annual meeting, sales of publications, donations, investments, and the fund raising and investing of the Agronomic Science Foundation, SSSA is able to run programs for its members and promote soil science to the broader community.

Things started off fairly well for SSSA, with positive balances in the bank at the end of the 1938 and 1939 fiscal years. However, from 1940 through 1944 SSSA finished the fiscal year with a negative account balance every year except 1941. From 1945 on, SSSA has finished each fiscal year with a positive net worth, although there have certainly been some individual years when SSSA has lost value. The most notable of those periods has been from 1999 to 2002, when SSSA lost over $1 million of net worth. Things have improved significantly for the Society since 2002; SSSA finished 2010 with an all-time high net worth of over $3.1 million. SSSA's financial history is summarized in Figure 5.

The Future

SSSA has many challenges and opportunities as we look towards the future. In recent years there has been significant concern about issues such as the teaching and practice of soil science by other fields (Brevik, 2009; Hartemink, 2008; Brevik, 2005), reduced enrollment in soil science programs (Collins, 2008; Morra and McDaniel, 2005), and reduced membership in SSSA (Figure 1, particularly 1992 to 2002). However, as we have moved into the 21st Century things appear to be improving for soil science and for SSSA. Several new global priorities emphasize soils

(Hartemink, 2008; Hartemink and McBratney, 2008), new job opportunities are being explored for soils graduates (Horton et al., 2005; Vepraskas et al., 2005; West et al., 2005) and the membership and finances of soils groups such as SSSA has taken a positive turn since 2002 (Figures 1, 5). While challenges still remain, the future of SSSA shows promise.

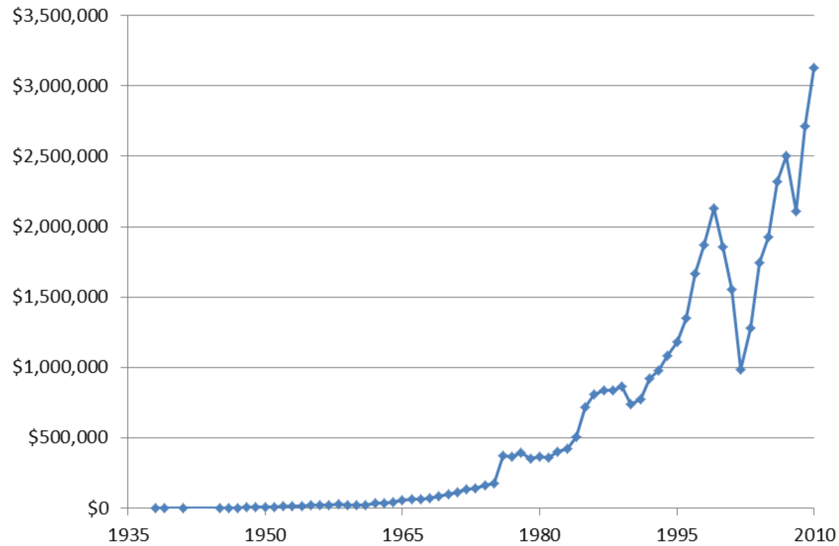

Figure 5. The net worth of SSSA by year. Data from 1938 to 2003 is from annual reports published in *SSSAJ*, data from 2004-2010 is from Headquarters Staff. The "missing" data points between 1938 and 1945 are years that SSSA finished the fiscal year with a negative balance.

References

Various SSSA committee and Headquarters reports, as published in *SSSA Journal* were used for the information as were Executive Committee, Board of Directors, and Headquarters reports as archived on the SSSA website were used for some of the information presented from 2004-2011. Information supplied by SSSA Headquarters Staff was also utilized.

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2011 SSSA Symposium Abstracts

The Council on the History, Philosophy, and Sociology of Soil Science sponsored a session titled **"75 Years of SSSA While Looking Toward the Future"** at the 2011 Soil Science Society of America meeting in San Antonio, Texas. The session looked back at the history of our society along with speculation concerning where our field will go in the future. The session was held on Tuesday, October 18, 2011: 8:00 AM-11:45 AM at the Henry Gonzalez Convention Center in Room 214C. The session was organized by Eric Brevik of Dickinson State University and Gary Pierzynski of Kansas State University. A total of 10 talks were given during the session, with a panel discussion held at the half-way point. Abstracts from those talks are given below:

Soil Microbiology and Biochemistry after 75 Years: Back to the Future.

Richard P. Dick, OSU, School of Environment and Natural Resources, Columbus, OH and Ann-Marie Fortuna, Dept. of Crop and Soil Sciences, Washington State University, Pullman, WA

Soil microbiology, over the last 75 years has and continues to be a "Back to the Future" discipline. Leading up to the establishment of the Soil Science Society of America (SSSA) in 1936 it was well known that soils could carry out enzymatic reactions, and many soil microbial species had been isolated. Microbiology was driven by human health needs, which was later recognized with the Noble Peace Prize award to the soil microbiologist, ***Selman Waksman*** (1952) for discovering streptomycin. Nonetheless, there were parallel efforts (led by Waksman) to apply classical microbiological techniques to study soils, transformations of organic matter, humic substance formation and plant nutrition, largely focused on agriculture. These topics and leguminous N fixation were dominant through the 1960s and 70s. Since the 1970's, there was a dramatic shift towards environmental microbiology but until recently, methodologies have been fundamentally unchanged - rooted in culturing, microscopy, biochemistry, and activity

measurements. With the advent of the "–omics" era, new avenues have evolved for studying ecology and uncultured microbial diversity of soils, which are yielding novel approaches for soil microorganisms to deliver environmental and agricultural services. At the same time, we are "back" to classical methods for "-omics truthing" and a renewed effort to mine soils for novel organisms and genes. Our scientists' diversity has changed over 75 years, with substantial representation of women and scientists from non-soil backgrounds now involved in soil microbiology and biochemistry.

Our personal soil career tracks are similar yet distinct. We both serendipitously discovered soil science as undergraduates; neither of us knowing there was a "science of soil" as high school graduates. However, our interest in soils was driven by the challenges of our "coming of age" eras. For Richard it was the post 60's interest of food production for developing countries where as for Ann Marie it was the environmental challenges of the1990s. We are both indebted to SSSA for early career development through annual meetings, working groups, and the interactions with eminent soil microbiologists. Soil microbiology and biochemistry is uniquely poised for unprecedented discoveries and to meet challenges such as global climate change, food security, and environmental quality.

A Pedologist Looks At Sixty.

Larry West, NSSC, USDA/NRCS, Lincoln, NE and Craig Rasmussen, Soil, Water, and Environmental Science Department, University of Arizona, Tucson, AZ

Considerable changes have occurred in the field of Pedology over the past 40 years. One of the more important events was the publication of Soil Taxonomy. This document and the classification system it described changed the way we view, describe, and categorize soils in the U.S. Diagnostic horizons and features and other soil properties defined in Soil Taxonomy propagated research dealing with formation and distribution of these soil features as well as their impact on soil behavior. New laboratory methods and instrumentation have had major impacts on Pedology, but improved sensor technology and non-invasive field evaluation methods such as ground penetrating radar have allowed development and better quantification of many soil features. As with most disciplines, development and availability of computer hardware and software, and advent of the internet have had substantial impact on Pedology research, education, and application. In addition to managing and analyzing data, computer technology and development and widespread use of GPS, GIS systems, spatial statistics, digital imagery, and remotely sensed data have enabled Pedology to become more quantitative and have allowed the quantitative description and analysis of landscapes and associated soils and soil properties. Furthermore, infusion of geomorphic and geochemical mass transport laws with these quantitative Pedologic principles presents the potential for developing a robust soil prediction framework that explicitly couples soil spatial variation with environmental forcing, pedogenic processes and soil-landscape evolution. New developments such as these over the next 40 years are expected to continue to appreciatively alter the field of Pedology.

Wetland Soils Research and Applications: Past, Present, and Future.

Michael Vepraskas, NC State University, Raleigh, NC and John White, Louisiana State University, Louisiana State University, Baton Rouge, LA

Wetland soils research has been conducted for over 100 years in several disciplines: soil chemistry, soil fertility, and pedology. Up until the 1980's, the work in both disciplines was focused on agricultural applications. Pedology developed techniques to map the poorly drained soils so they could be drained for agricultural production. Soil chemistry focused on how the drained soils needed to be managed to grow agricultural crops. Drained wetland soils were made suitable for production of most crops including corn, soybeans, cotton, etc. by regular applications of fertilizer and lime. Not all poorly drained soils were drained for agricultural purposes. Rice production needed ponded conditions, and soils were compacted and diked to pond water above the soil surface. Also in the 1980's, wetland laws were enacted at both the federal and state levels to prevent the drainage or filling of wetlands. Under the federal policy of "no net loss" of wetlands, permits were required to drain or fill a wetland. As part of the permit, the land developer would be required in most cases to restore or create a wetland to replace the acreage lost by draining or filling. To implement these laws, pedologists developed hydric soil field indicators to identify the soils in wetlands that needed to be protected. At this time, these indicators are being used by the USDA, US Army Corps of Engineers, and USEPA to enforce wetland protection laws. Restoration of wetlands is frequently done on agricultural land that was drained that received annual applications of fertilizer and lime. These areas are restored by plugging drainage ditches and planting wetland vegetation. Residual nutrients remaining in the soils of restored wetlands are available for the wetland vegetation. However, some nutrients such as P, are being mobilized following wetland restoration and may drain from the site before being taken up by plants, and may contribute to eutrophication downstream. Future research in wetland soils will have to develop ways to manage excess nutrients coming from lands used for agriculture.

Soil Physics 1936-2011 and a Look Ahead.
Frank Casey, North Dakota State University, Fargo, ND, and M. B. Kirkham, Kansas State University, Manhattan, KS

As part of the 75th anniversary of the Soil Science Society of America, we shall share a talk concerning the history and future of Division I of the Society, Soil Physics. One of us will provide the perspective of a 39-year member. The talk will give a personal, first-hand account of how SSSA and the field of soil physics have changed over the years. It will be colored by her interests and experiences and will reflect on those who have had a past and current impact on soil physics. It will give, as well, an evaluation for areas of needed research where we should take a look in the future. The other speaker will present a perspective as a newer member and one still early in his career. Colored by his interests and experiences, he also will talk about the future of the field and the direction that it should be heading.

Tropical Soils Research: 75 Years Backwards and 75 Years Forward.
Pedro Sanchez, Earth Institute at Columbia University, Palisades, NY and Patrick Mutuo, MDG Center for East and Southern Africa, Nairobi, Kenya

When SSSA was created, soil science looked at soils of the tropics as something unique: red, highly weathered, acid, infertile and turned into laterite if cleared of its native vegetation. The advent of quantitative pedology, expanded soil surveys, the first world soils map, and publications openly challenging the laterite paradigm and intelligent agronomy, gradually resulted in a new paradigm that recognizes the great diversity of soils in the tropics. The term "tropical soils" is as meaningless as "temperate soils". All 12 soil orders in the latest edition of Soil Taxonomy occur in the tropics along with 38 suborders, hundreds of great soil groups and thousands of soil families and soil series. Management systems were developed primarily in Brazil and Colombia that made Oxisols—the stereotypical tropical soil---- highly productive with soybean yields equivalent to those of Mollisols—the stereotypical temperate soil---the US Midwest. Key metrics were developed that make this breakthrough possible: The aluminum ion as the major cause of soil acidity; amelioration of the subsoil with lime and gypsum; variable charged clays, effective phosphorus management , effective rhizobia strains for soybeans and Al-tolerant cultivars. About 40 years after SSSA was founded research in the tropics led the way with placing soil biology as a science with a predictive understanding of plant litter quality; 60 years after the founding of SSSA, the tropics led the way in using near and mid –infrared spectroscopy to rapidly characterize soil properties and 70 years after the founding of SSSA, the first large scale use of digital soil mapping.

Evolution of Philosophy and Tools.

Sally Brown, University of Washington, Seattle, WA and Thomas DeSutter, North Dakota State University, Fargo, ND

Division S11, Soils and Environmental Quality has traditionally focused on behavior of contaminants in soil/plant systems. When Sally Brown first started graduate school in 1990, much of the research revolved around shake and filter extracts. Bioavailability was measured largely by metal content of plant tissue. Since that time, our knowledge of bioavailability and ecosystem function has become much broader. For Dr. Brown, this understanding of ecosystem function has resulted in a shift in research to the Environmental Quality aspects of S-11. Now, instead of researching metal bioavailability in residuals, she works using residuals to enhance environmental quality. Tom DeSutter, who started graduate school in 1994, has also focused on shake and filter extracts for his research. Although bioavailability can be determined through these approaches, DeSutter has taken an interest in how to asses bioavailability (plants, macro-micro-fauna) through the use of bio- and nano-sensors. A broader understanding of bioavailability through this nuanced approach may lead to a deeper and hopefully fuller assessment of environmental quality.

Historical Highlights From 75 Years of SSSA.

Eric Brevik, Dickinson State University, Dickinson, ND

From its official founding on November 18, 1936 to the present day, SSSA has developed a rich and diverse history. Our society began with 190 members grouped into six sections: 1) physics, 2) chemistry, 3) microbiology, 4) fertility, 5) morphology, and 6) technology. Today we have over 6,000 members who can choose from any of 11 divisions, S1 Soil Physics, S2 Soil Chemistry, S3 Soil Biology and Biochemistry, S4 Soil Fertility and Plant Nutrition, S5 Pedology, S6 Soil and Water Management and Conservation, S7 Forest, Range, and Wildland Soils, S8 Nutrient Management and Soil and Plant Analysis, S9 Soil Mineralogy, S10 Wetland Soils, and S11 Soils and Environmental Quality to represent their primary area(s) of interest. The Society has also gone from being largely agriculturally focused to an eclectic mix of individuals with interests in agriculture, the environment, earth sciences, human interactions, and other diverse areas. At its founding, our society sponsored one publication, the *Soil Science Society of America Proceedings*. Today, we sponsor its descendent, the *Soil Science Society of America Journal*, as well as *Vadose Zone Journal*, the *Journal of Environmental Quality*, *Soil Survey Horizons*, and the *Journal of Natural Resources and Life Science Education*. In short, our Society's history has been one of continued growth over the last 75 years. The future holds many challenges for our Society. There are increasing calls to meet with groups other than or in addition to ASA and CSSA, groups like the Geological Society of America and the Ecological Society of America. Members in SSSA now work in university departments, government agencies, and businesses representing biology, geology, geography, and archeology, among others, in addition to the traditional agricultural sector. How SSSA handles this diversification of the field and its membership will influence the future of the Society.

Building a Bright Future for Soil Science From Strong Foundations.
Stephen Anderson, Univ. of Missouri, Columbia, MO

Historically, the University of Missouri contributed significantly to the Soil Science Society of America. Six of the first 12 Presidents of the Soil Science Society of America began their scientific careers at the University of Missouri: Richard Bradfield, William A. Albrecht, Leonard D. Baver, C. Edmund Marshall, Frank L. Duley, and Hans Jenny. All these scientists were hired by Professor Merritt F. Miller, providing a strong soil science program in Missouri. The most significant work of Professor Miller was the development of methods for evaluating soil erosion and cropping systems for soil conservation. In 1915, R.W. McClure, an undergraduate student in soil science, and Professor Miller measured rainfall and runoff over a two-month period in the first soil erosion experiment in the U.S. These early Missouri data supported a request for funds for 10 soil erosion experiment stations from whose data the Universal Soil Loss Equation was developed. This example of creative work by an undergraduate student emphasizes the need to attract bright individuals to pursue careers in soil science to solve the significant challenges facing future generations. The current issue of insufficient enrollment in undergraduate programs has prompted many institutions of higher education to discontinue soil science offerings, a major challenge affecting the future of soil science. A recent case study details the addition of an environmental science program within a traditional soil science department. The effect of this offering has been to increase undergraduate departmental majors by approximately 45 to 50, with increases in incoming test scores. Participation by these students in soil science courses, soil judging activities, and other offerings has enhanced soil science and increased the number of undergraduates pursuing careers related to soil science. Attracting bright young people to pursue studies in environmental sciences related to soils will ensure a bright future for soil science.

75 Years of Mined-Land Reclamation Reported In SSSAP/J.
Walter E. Grube Jr., Soil Chemistry Consultant, Temple, PA

A major definition of Land Reclamation includes reducing the erosion and sustaining vegetation on lands disturbed by surface mining and/or mineral processing tailings deposits. The past 75 years' Soil Science Society of America Proceedings and Journals were searched for reports by soil scientists' documenting the properties of land and soils physically and chemically disturbed by man's industrial activities

The earliest report in SSSAP in 1946, by Tyner and coworkers , examined mined land soils in West Virginia. They published a followup paper in the 1948 Journal of the American Society of Agronomy.
SSSAP/J articles from the 1950's through the 1970's were few. Perhaps not surprisingly, JEQ became a dominant outlet. NEPA and SMCRA in the 1970's supported and provoked more intensive studies and reports on minesoils and related disturbed land areas. Reports of mined-land reclamation studies came in from nearly all mining regions of the U.S., and outside. Methods of characterizing and studying new soils on mined-lands appeared in the 1970's and 1980's. The CERCLA in 1980 introduced chemically contaminated soils and land areas to the soil science community, along with phytoremediation and other new words by soil scientists investigating hazardous element and organic compound removal from a soil mass. SSSA has published 2 books on land reclamation.
Into the 21st Century and beyond, substantial land and soil areas, both large and small tracts, will continue to be excavated, mixed, contaminated, amended, and either left for posterity, applied to some new and different use, or returned to a prior economic goal such as crop or tree production. Soil scientists remain the primary professionals who have the education and experience in pedology, mineralogy, chemistry, biology, and landscape properties to provide optimum site and soil data and interpretations for any planned economic or societal uses of these soils.

75 Years of Soil Science.
Alfred Hartemink, University of Wisconsin, Madison, WI

Geology was more or less born at the beginning of the nineteenth century and the scientific study of soils started some 50 years after geology was established as a scientific discipline. There were essentially two groups that studied soils. A large group worked in the laboratory and they were called agro-chemists, who were mainly found in Western Europe where little land for extending the farm was available. Research interests had to focus on improving soil conditions of existing agricultural fields. Agricultural chemists dominated soil science for most of the nineteenth century. A smaller group of scientists studied soils in the field and they were mostly trained as geologists; they were agro-geologists. In the Russian Empire, large areas of land were available for agricultural expansion and there was a need for soil mapping and a better understanding of the soil concept. It is in the Russian Empire and later on in the USA, that soil survey and cartography developed. Agro-geologists and agro-chemists operated in different laboratories and continents. There was relatively little interaction at the time, possibly because so little was understood about soils and there was widespread disagreement and lack of consensus on almost all aspects of soil research. Soil science became a solid scientific discipline once the agro-geologists and agro-chemists joined their research capacities and organised joint meetings since 1909. Soil research in tropical regions started later than in the temperate regions and its scope has not changed much. The feeding of the ever increasing population, land degradation and the maintenance of soil fertility are still important research themes. The amount of research in environmental protection, soil contamination and ecosystem health is relatively small. More is known about the soil resources in the temperate regions than in the tropical regions despite the fact that one-third of the soils of the world are in the tropics and these support more than three-quarters of the world population. Soil science greatly expanded in the first half of the twentieth century. Since the Second World War, soil science has greatly benefited from new instrumentation and developments in other sciences. Many subdisciplines and specializations have been formed and soil science has broadened its scope in the temperate regions. Soil science had its zenith in the decades after World War II when the provision of food for growing populations became a key area of research. Soil research has made enormous contributions to the increase in agricultural production and in those times most soil scientists viewed soil as the foundation for agriculture. This changed in the 1970s, when soil science became linked to environmental concerns, like soil pollution, eutrophication and ground water contamination and soils were also viewed as stores and filters of contaminants. Climate change and soils came on to the global agenda in the 1980s.

German History of Soil Science Working Group

There was a meeting of the working group in Berlin In September 2011. The lectures of the meeting will be published during springtime 2012 as separate booklet of the *Schriftenreihe Institute of Plant Nutrition & Soil Science, Kiel University* (order from hblume@soils.uni-kiel.de: 15 €):

1 Blume, H.- P., Bölter, M., Kiel: *Christian Ehrenberg* (*1795 - 1876*) *und der Beginn der Boden-Mikrobiologie in der Mitte des 19. Jahrhunderts* (Christian G. Ehrenberg and the Birth of Soil Microbiology in the Middle of the 19th Century)
2 Blume, H.-P. Kiel: *Die Bedeutung von V.V. Dokučaev (1846-1903) für die Entwicklung der deutschen Bodenkunde* (The influence of V.V. Dokučaev upon the development of German Soil Science).
3 Rehfuess, K. E., Schad, P., Weihenstephan: *Die Bedeutung von Emil Ramann*(1851 – 1926) *für die Entwicklung der Bodenkunde* (The influence of E. Ramann upon the development of German Soil Science)
4 Dilly, O., Hamburg: *Die Bedeutung von Selman Waksman (1888-1973) für die Entwicklung der Bodenkunde* (The influence of S. Waksman upon the development of Soil Science)
5 Altermann, M., Halle: *W. Rothkegel (1874 – 1959)und die Entwicklung der Bodenschätzung in Deutschland* (W. Rothkegel and the development of German Soil Taxonomy for agricultural use)
6 Horn, R., Kiel: *K.H. Hartge (1926-2010) - der Vorreiter einer modernen Bodenphysik-forschung und -lehre in Deutschland* (K. H. Hartge a pionier of modern research of modern Soil Physics)
7 Kowalkowski, A., Polen, Jäger, K.-D., Berlin, Succow, M., Rostock, Altermann, M., Halle: *Die Bedeutung von Dietrich Kopp (1921 – 2008) für die Bodenkunde* (The influence of D. Kopp upon Soil Science)

Journal News

Soil Horizons – A Reformatted Journal of the Soil Science Society of America

Editor's note: Soil Horizons accepts research articles on the field study of soils, including historical articles. Soil Horizons also publishes the "Profiles in History" feature noted on page 2 of this newsletter.

I am writing with exciting news concerning the journal Soil Survey Horizons, published by the Soil Science Society of America. Soil Survey Horizons was established in 1960 as a medium for expressing ideas, problems, and philosophies concerning the study of soils in the field. Content includes research updates, soil news, history of soil survey, and personal essays from the lives of soil scientists. Contributors and readers include soil survey personnel, private consultants, soils educators, researchers, and students. Topics covered include soil survey problems, innovative methods and equipment, landscape and soil research studies, and case studies from consulting work. The journal typically publishes 4 volumes per year as print copies. The journal is quite unique and fills an important niche not covered many other soils journals.

While the content and readership of Soil Survey Horizons has remained strong, the journal was faced with several limitations: 1) it was not available online, 2) it was not indexed by on-line services, and 3) it was mainly focused on work within the United States.

Careful consideration of these limitations by the SSH board and Soil Science Society of America have led the journal to evolve; an evolution that will begin January 1, 2012. The Soil Science Society of America Board has approved a host of changes related to SSH; changes that will improve the scientific rigor and readership of the journal, while recognizing the historical charge and focus of the journal. Specifically, the following changes will be enacted:

1) The journal will be renamed “Soil Horizons” (SH) so as to broaden the focus and readership
2) Application has been made to have the journal indexed by ISI and Elsevier Scopus (acceptance is not guaranteed and will take time, but this is clearly a direction we want to move toward)
3) The journal will begin online (electronic) dissemination of its content
4) The manuscript submission/review process will be administered via Manuscript Central
5) Strong efforts will be made to broaden the journal to include substantial international content
    a. In support of this, 3-4 new associate editors from different continents will be sought for service on the SH board
6) Efforts will made to transition from a strictly editor reviewed content system to a joint editor/external peer review system
7) All historical content of SSH will be captured, digitized, and will become fully web searchable
8) Expansion of the journal to include a section on the professional practice of soil science: columns on timely issues, two-sides of contentious questions, feature articles on soils accessible to those new to soil science, photos/video/dynamic content of field excursions, announcements for the readership (upcoming meetings, summer internships, etc.).

However, in making these changes, some things will not change. Submissions will remain free of charge to authors. The journal will continue its highly acclaimed graduate and undergraduate student essay contest for original research articles. The focus of the journal will remain true to its original mission. Illustrative photos and ancillary content are always encouraged. With the new move to online publishing, we will even have the ability to link slide shows, panoramic photos, video, and other dynamic content as part of published articles.

In addition to research articles and original manuscripts, the new SH will feature invited original essays from some of the world’s leading soil scientists, giving their perspective and thought to issues of relevance. A sample table of contents and an example of a recent article published in our journal are attached for your review.

As a final note, please give strong consideration to submitting an article, announcement, or discussion point for inclusion in the new Soil Horizons. Our dynamic editorial team looks forward to the opportunity to work with authors to get their work in print.

With very best regards,
David C. Weindorf, Editor

New Historical, Philosophical, or Sociological Articles and Book Chapters

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Historical Presentation

Joel Gruver at Western Illinois University has developed a presentation titled "Historical Development of Organic Agriculture" that is available at http://www.slideshare.net/jbgruver/history-of-organic-agriculture.

2012 SSSA Meeting Plans

S205.1 – Council on the History, Philosophy, and Sociology of Soil Science has submitted a proposal for a session titled "150th year Anniversary of US Department of Agriculture-Celebration of Agricultural Research History" at the 2012 meeting in Cincinnati, Ohio, USA. We don't yet know if this session has been accepted by the SSSA planning committee, as they have yet to announce accepted sessions. If this session is accepted, it will include opportunities for both volunteered papers as well as invited speakers. For more information on this session contact Maxine Levin at maxine.levin@wdc.usda.gov.

Eurosoil 2012

There are several sessions planned at Eurosoil 2012 that will be of interest to those following and researching in soil science history, philosophy, and sociology. They include:

S13.1 Soils and archaeology - Convener: Füleky György - Szent István University – Hungary
S13.2 Soil status and society - Convener: Hartmann Ingrid - Desertnet International – Germany
S13.3 Soil policy and soil information in a changing world - Convener: Krasilnikov Pavel - Moscow State University - Russian Federation
W13.2 Soils of natural and cultural heritage - Convener: Vancampenhout Karen - Associatie K.U.Leuven – Belgium
R2. Soil science: are we facing real needs from society? - Convener: Bouma Johan - Wageningen University - Netherlands

News Items Wanted

Relevant news items, articles, etc. are always welcomed for publication in the History, Philosophy, and Sociology of Soil Science Newsletter. This includes history, philosophy, or sociology sessions held at meetings of any of the various national soil science societies, new articles or books published in these areas, or anything else you feel might be appropriate. Please send submissions to the newsletter editor, Eric Brevik, at Eric.Brevik@dickinsonstate.edu.

Items are welcomed throughout the year. Anything submitted will be filed for use in the next newsletter.

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