

BULLETIN

OF THE INTERNATIONAL SOCIETY
OF SOIL SCIENCE

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BULLETIN

DE L'ASSOCIATION INTERNATIONALE
DE LA SCIENCE DU SOL

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MITTEILUNGEN

DER INTERNATIONALEN BODENKUNDLICHEN
GESELLSCHAFT

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INTERNATIONAL SOCIETY OF SOIL SCIENCE
ASSOCIATION INTERNATIONALE DE LA SCIENCE DU SOL
INTERNATIONALE BODENKUNDLICHE GESELLSCHAFT

Office/Bureau: c/o Royal Tropical Institute, 63 Mauritskade, Amsterdam, Netherlands.

COUNCIL/CONSEIL/BEIRAT:

Executive Committee/Comité Exécutif/Verwaltungsausschuss:

- President** : E. G. Hallsworth, C.S.I.R.O. Division of Soils, Private Bag No. 1, Glen Osmond, South Australia.
- Vice-President** : J. P. Quirk, Dept. of Soil Science and Plant Nutrition, University of Western Australia, Nedlands, W. Australia.
- Past-President** : N. C. Cernescu, Comité Géologique, Soseaue Kiseleff 2, Bucharest, Rumania.
- Secretary-General**: F. A. van Baren, c/o Royal Tropical Institute, 63 Mauritskade, Amsterdam, Netherlands.

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- Sir John E. Russell, Woodstock House, Woodstock, Oxford, England.
- Prof. Dr W. P. Kelley, University of California, 120 Hilgard Hall, Berkeley 4, Cal., U.S.A. (†)
- Prof. Dr Sante Mattson, Båstad, Sweden.
- Prof. Dr Emil Truog, University of Wisconsin, Madison 6, Wisc., U.S.A.
- Prof. Dr. E. C. J. Mohr, 38 Oude Engweg, Hilversum, Netherlands.
- Dr Firman E. Bear, Rutgers University, New Brunswick, N.J., U.S.A.
- Prof. J. A. Prescott, 62 Cross Road, Myrtle Bank, South Australia.

Commissions/Commissions/Kommissionen:

- I — SOIL PHYSICS.**
Chairman: G. H. Bolt, Laboratorium Landbouwscheikunde, Prof. Ritzemabosweg, Wageningen, Netherlands.
- II — SOIL CHEMISTRY.**
Chairman: J. M. M. J. Fripiat, Institut Agronomique, Avenue Cardinal Mercier, 92 Héverlé-Louvain, Belgique.
- III — SOIL BIOLOGY.**
Chairman: J. Macura, Institute of Microbiology, Budějovická 1083, Praha 4, Czechoslovakia.
- IV — SOIL FERTILITY AND PLANT NUTRITION.**
Chairman: Y. Ishizuka, Hokkaido University, Department of Soil Fertility and Plant Nutrition, Sapporo, Japan.
- V — SOIL GENESIS, CLASSIFICATION AND CARTOGRAPHY.**
Chairman: V. A. Kovda, Academy of Sciences, Moscow, U.S.S.R.
- VI — SOIL TECHNOLOGY.**
Chairman: I. D. Stalcu, Institut Central de Recherches Agricoles, Bd. Marasti 61, Bucarest, Roumanie.
- VII — SOIL MINERALOGY.**
Chairman: B. D. Mitchell, The Macaulay Institute for Soil Research, Department of Pedology, Craigiebuckler, Aberdeen, Scotland.

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No. 28

1966

NEWS OF THE SOCIETY — NOUVELLES DE L'ASSOCIATION —
NEUES AUS DER GESELLSCHAFT

9th International Congress of Soil Science

The 9th International Congress of Soil Science is scheduled to be held in Adelaide, Australia, from 6—16 August 1968. The following programme and initial statement is issued by I.S.S.S.'s President, Dr. E. G. Hallsworth.

Programme — initial statement

In recognition of the manner in which the interests of each Commission tend to interlock with those of other Commissions, the Committee has prepared a programme based on four major themes, interest in which is shown by several Commissions.

These are:

1. Transport processes in soils.
2. Surface chemistry.
3. Weathering and soil formation.
4. Nutrients in soils.

These themes will be shared by three or more Commissions and developed sometimes by one Commission, sometimes in another and sometimes by joint sessions. The interested delegate may then move from one Commission to another as he follows new aspects of a theme.

As well as these there will be four themes, each of which will be common to two Commissions, and each Commission will have one theme peculiar to itself.

The themes are shown below, with the Commission or Commissions involved at each stage.

Major themes

- 1) *Transport processes in soils:*
 - movement of water, water vapour, oxygen, CO₂ and heat I *
 - diffusion of solutes I, II
 - effect of water flow and surface reactions on transport of solutes* I, II
 - root mechanisms and nutrient uptake by plants IV
 - soil and salinity factors in irrigation & drainage I, VI
- 2) *Surface chemistry:*
 - of clay — organic, and inorganic surfaces II, VII
 - clay — electrolyte-water interactions I, VII
 - surface chemistry of organic matter II
- 3) *Weathering and soil formation:*
 - chemical weathering II, V, VII
 - mineral aspects of weathering, including profile differentiation V, VII
 - modification of the mineral fraction by microflora and fauna III, V

* The Commissions are indicated I—VII respectively for I = soil physics, II = soil chemistry, III = soil microbiology, IV = soil fertility & plant nutrition, V = soil genesis, classification & cartography, VI = soil technology, VII = soil mineralogy.

- 4) *Nutrients in soil:*
- | | |
|--|-------------|
| nitrogen — transformations in soils | II, III, IV |
| — symbiotic and non-symbiotic fixation in soils | III |
| phosphorus — mineralogy, fertilizer reaction products and availability to plants | II, IV, VII |
| potassium — mineralogy, chemistry & availability | II, IV, VII |
| forms of micronutrients in soils | II, VII |
| role of micronutrients in plant nutrition | III, IV |
| quantitative assessment of soil properties in relation to fertility | IV, V, VI |

Minor themes

- 1) *Classification*
- | | |
|---|-------|
| critical review of procedures and criteria in general soil classification | V, VI |
| land survey and land use planning | V, VI |
- 2) *Soil organic matter*
- | | |
|--|---------|
| humus forms | III, V |
| role of organic matter in soil formation | III, V |
| composition, synthesis and decomposition of soil organic matter | II, III |
| role of micro-organisms in the synthesis and decomposition of organic matter | III |
| effects of accumulation and mineralisation on soil fertility | III, IV |
- 3) *Soils in relation to rice*
- | | |
|---|--------|
| soil characteristics and management in relation to rice | IV, VI |
| effects of waterlogging of rice on soil properties | IV, VI |
| quantitative assessment of soils for rice | V, VI |
- 4) *Soil strength*
- | | |
|---|-------|
| in relation to tillage, root development and seedling emergence | I, VI |
|---|-------|

Themes peculiar to each Commission

- Commission I:* Techniques of research in soil physics: instrumentation; data handling, computational methods and models; the problem of heterogeneity in soil physical properties.
- Commission II:* Analytical techniques including automation.
- Commission III:* Microbial stimulation and inhibition of plant growth
Techniques for studying the functions of soil biological populations
- Commission IV:* Root mechanisms in the uptake of nutrients of plants
- Commission V:* Principles of soil distribution
- i) soil-landscape relationships
 - ii) soil-age relationships
- Commission VI:* Soil management in farming systems:
tillage, crop rotations, fertilizer requirements, compaction, fire, entry and retention of soil moisture
- Commission VII:* Methods of characterising minerals; new evidence for clay mineral structures

In order to allow time for effective presentation and discussion, there will be no general sessions other than the Presidential address, papers will be published in full in their final form before the Congress opens, and the numbers will be restricted to approximately 45 per Commission.

Tours

Pre- and post-congress tours will be organized with quite a choice of possibilities, to wit:

1. Western Australia (pre-congress only)
2. S.E. Queensland and northern New South Wales
3. Research Stations of the Murray Valley
4. S.E. Australia
5. Northern Queensland
6. New Zealand.

Further details will be given in the next number of the Bulletin.

Neuvième congrès international de la science du sol

Programme — Exposé initial

Ayant constaté que les sujets exposés dans chaque Commission tendent à s'interpénétrer dans des sujets d'autres Commissions, le Comité a préparé un programme basé sur quatre thèmes principaux dont l'intérêt se manifeste dans plusieurs Commissions.

Ces thèmes sont:

1. Processus de transport dans les sols.
2. Chimie de surface.
3. Altération et formation du sol.
4. Eléments nutritifs dans les sols.

Ces thèmes se répartiront dans trois ou plusieurs Commissions et seront développés soit par l'une d'entre elles, soit dans une autre, soit par des sessions conjointes. Le délégué intéressé pourra donc passer d'une Commission à l'autre et ainsi suivre les nouveaux aspects d'un thème.

En plus de cela, il y aura quatre autres thèmes dont chacun sera commun à deux Commissions, et chaque Commission aura un thème qui lui sera propre.

Les thèmes sont décrits ci-après avec la ou les Commissions intéressées.

Thèmes Principaux

1) *Processus de transport dans les sols*

- mouvement de l'eau, de la vapeur d'eau, de l'oxygène, du CO₂ et de la chaleur I *
- diffusion des éléments dissous I, II
- effet de l'écoulement de l'eau et des réactions de surface sur le transport des éléments dissous I, II
- mécanismes radiculaires et prélèvement des éléments nutritifs par les plantes IV
- sol et facteurs de salinité en irrigation et drainage I, VI

2) *Chimie de surface*

- surfaces argile-matière organique et surfaces des substances inorganiques II, VII
- interactions argile-électrolyte-eau I, VII
- chimie de surface de la matière organique II

3) *Altération et formation du sol*

- altération chimique II, V, VII
- aspect minéral de l'altération y compris la différenciation dans le profil V, VII
- modification de la fraction minérale par la microflore et la faune III, V

4) *Eléments nutritifs du sol*

- azote — transformations dans les sols II, III, IV
- fixation symbiotique et non symbiotique dans les sols III
- phosphore — minéralogie, produits de réaction des engrais et disponibilité pour les plantes II, IV, VII
- potassium — minéralogie, chimie et disponibilité II, IV, VII
- formes d'éléments nutritifs mineurs dans les sols II, VII
- rôle des éléments nutritifs mineurs dans l'alimentation des plantes III, IV
- répartition quantitative des propriétés du sol en relation avec la fertilité IV, V, VI

* Les Commissions sont indiquées par les chiffres I à VII. I = physique du sol, II = chimie du sol, III = microbiologie du sol, IV = fertilité du sol et alimentation des plantes, V = pédogenèse, classification et cartographie des sols, VI = technologie du sol, VII = minéralogie du sol.

Thèmes Secondaires

1) Classification

- revue critique des méthodes et critères en classification générale des sols V, VI
- prospection et planning d'utilisation des sols V, VI

2) Matière organique du sol

- formation d'humus III, V
- rôle de la matière organique dans la formation du sol III, V
- composition, synthèse et décomposition de la matière organique du sol II, III
- rôle des microorganismes dans la synthèse et la décomposition de la matière organique III
- effets de l'accumulation et de la minéralisation sur la fertilité du sol III, IV

3) Sols en relation avec le riz

- caractéristiques du sol et traitement en relation avec le riz IV, VI
- effets de l'engorgement du riz sur les propriétés du sol IV, VI
- répartition quantitative des sols pour le riz V, VI

4) Résistance du sol

- en relation avec le labour, le développement racinaire et la levée des semis I, VI

Thèmes particuliers à chaque Commission

Commission I: Techniques de recherche en physique du sol: appareillage; interprétation des résultats, méthodes d'évaluation et modèles; le problème de l'hétérogénéité dans les propriétés physiques du sol.

Commission II: Techniques analytiques, y compris l'automatisme

Commission III: Stimulation microbienne et inhibition de croissance de la plante. Techniques pour l'étude des fonctions des populations biologiques du sol.

Commission IV: Mécanismes racinaires dans le prélèvement des éléments nutritifs par les plantes

Commission V: Principes de distribution des sols
— relation sol-paysage
— relation sol-âge

Commission VI: Aménagement du sol dans les systèmes d'exploitation:
— labour, rotation, besoin en engrais, tassement, feu,
— pénétration et rétention de l'humidité du sol

Commission VII: Méthodes de caractérisation des minéraux; nouvelle théorie sur les structures des minéraux argileux

Dans le but de consacrer suffisamment de temps à la présentation et à la discussion, il n'y aura pas de sessions générales sinon le discours du Président. Les communications seront publiées in extenso dans leur texte définitif avant l'ouverture du Congrès. Leur nombre sera limité à environ 45 par Commission.

Excursions

Les Excursions précédant et suivant le Congrès seront organisées avec un choix très étendu de possibilités:

1. Australie occidentale (uniquement avant le Congrès)
2. Queensland du S-E et Nouvelle Galle du Sud septentrionale
3. Stations de recherches dans la Murray Valley
4. Australie sud orientale
5. Queensland septentrional
6. Nouvelle Zélande

Des détails complémentaires seront donnés dans le prochain Bulletin de la Société.

IX. Internationaler Bodenkundlicher Kongress

In Anerkennung der Weise in welcher die Interessen jeder Kommission zusammenlaufen mit solcher anderer Kommissionen, hat das Organisationskomitee ein Programm aufgestellt auf folgende vier Hauptthemen, in welchen verschiedene Kommissionen interessiert sind.

Diese Hauptthemen sind:

1. Transportprozesse in Böden.
2. Oberflächenchemie.
3. Verwitterung und Bodenbildung.
4. Nahrungsstoffe in Böden.

An diesen Themen beteiligen sich eine oder mehrere Kommissionen. Sie werden demnach entweder von einer Kommission oder in Gesamtsitzungen behandelt. Interessenten können also nach Wunsch von einer Kommissionssitzung in eine andere übersiedeln, je nachdem neue Ansichten eines Themas hervorgetreten sind.

Neben diesen Themen gibt es vier andere Themen, welche je zwei Kommissionen anbelangen. Ueberdies wird jede Kommission ein spezifisches Thema versorgen.

Die Themen sind im folgenden gruppiert mit Andeutung der betreffenden Kommission oder Kommissionen.

Hauptthemen

1) *Transportprozesse in Böden*

Wasserbewegung, Wasserdampf, O ₂ , CO ₂ und Wärme	I *
Diffusion von Lösungen	I, II
Einfluss der Wasserbewegung und Oberflächenreaktionen auf den Transport von Lösungen	I, II
Wurzelmehanismen und Nährstoffaufnahme von Pflanzen	IV
Boden- und Salinitätfaktoren bei Bewässerung und Drainage	I, VI

2) *Oberflächenchemie*

Ton und organische Oberflächen, und Ton und anorganische Oberflächen	II, VII
Ton - Elektrolit - Wasser Interaktion	I, VII
Oberflächenchemie der organischen Substanz	II

3) *Verwitterung und Bodenbildung*

Chemische Verwitterung	II, V, VII
Mineralogische Ansichten der Verwitterung, einschliesslich Profildifferentiation	V, VII
Modifikation der Mineralfraktion durch die Mikro-flora und -fauna	III, V

4) *Nahrungsstoffe im Boden*

Stickstoff — Umwandlungen in Böden	II, III, IV
— Symbiotische und nicht-symbiotische Festlegung in Böden	III
Phosphor — Mineralogie, Düngerreaktionsprodukte und Assimilierbarkeit durch die Pflanzen	II, IV, VII
Kali - Mineralogie, Chemie und Assimilierbarkeit	II, IV, VII
Spurenelemente; wie sie vorkommen	II, VII
Bedeutung der Spurenelemente für die Pflanzenernährung	III, IV
Quantitative Bestimmung von Bodeneigenschaften in Beziehung zur Fruchtbarkeit	IV, V, VI

Nebenthemen

1) *Klassifikation*

Kritische Betrachtung der Methodik und Kriterien der allgemeinen Bodenklassifikation	V, VI
Bodenkartierung und Bodengebrauchsplanung	V, VI

* Die Kommissionen sind angegeben I—VII respektive für I = Bodenphysik, II = Bodenchemie, III = Bodenmikrobiologie, IV = Bodenfruchtbarkeit und Pflanzenernährung, V = Bodengeneese, Klassifikation und Kartographie, VI = Bodentechnologie, VII = Bodenmineralogie.

- 2) *Organische Substanz im Boden*
- | | |
|---|---------|
| Humusformen | III, V |
| Rolle der organischen Substanz bei der Bodenbildung | III, V |
| Zusammensetzung, Aufbau und Abbruch der organischen Substanz im Boden | II, III |
| Rolle der Mikroorganismen bei der Synthese und dem Abbruch der organischen Substanz | III |
| Folgen der Akkumulation und Mineralisation auf die Bodenfruchtbarkeit | III, IV |
- 3) *Böden und die Reiskultur*
- | | |
|---|--------|
| Bodencharakteristiken und Bodenbehandlung in Beziehung zu Reis | IV, VI |
| Folgen von Wasserflusshemmungen durch Reiskultur auf Bodeneigenschaften | IV, VI |
| Quantitative Bewertung von Böden für die Reiskultur | V, VI |
- 4) *Bodenfestigkeit*
- | | |
|--|-------|
| in Beziehung zur Bodenbearbeitung, Wurzelentwicklung und Keimfähigkeit | I, VI |
|--|-------|

Spezialthemen jeder Kommission

- Kommission I:* Untersuchungsmethodik in der Bodenphysik; Apparatur; Bearbeitung der Ergebnisse, mit Computermethoden und Modellen; Problematik der Heterogenität der physischen Bodeneigenschaften.
- Kommission II:* Analytische Methodik einschliesslich Automation.
- Kommission III:* Anregung und Hemmung des Pflanzenwachstums durch Mikroben. Methodiken des Studiums der Funktion der biologischen Lebensgesellschaften.
- Kommission IV:* Wurzelmechanik bezüglich der Aufnahme von Pflanzennährstoffen.
- Kommission V:* Grundlage der Bodenverteilung.
i) Gesetze Landschaft-Böden Verhältnisse.
ii) Zeit-Böden Verhältnisse.
- Kommission VI:* Bodenbehandlung in den verschiedenen landwirtschaftlichen Systemen:
Bearbeitung, Wechselwirtschaft, Düngerbedürfnisse, Bodenverdichtung, Abbrennen.
Aufnahme und Festlegung von Bodenfeuchtigkeit.
- Kommission VII:* Methodik der Mineralbestimmung; Neues bezüglich Struktur der Tonmineralen.

Damit genügend Zeit für die Vorträge und erfolgreichen Diskussionen zur Verfügung steht, werden, mit Ausnahme der Zuspache des Präsidenten, keine allgemeine Sitzungen abgehalten. Verhandlungen werden vor dem Anfang des Kongresses vollständig veröffentlicht. Ihre Anzahl wird auf ungefähr 45 pro Kommission beschränkt werden müssen.

Exkursionen

Exkursionen werden vor- und nach dem Kongresse organisiert mit einer schönen Auswahl von Möglichkeiten, nämlich:

1. West Australien (lediglich vor dem Kongress)
2. Queensland (südöstlich) und Nord-New South Wales
3. Versuchsanstalten in Murray Valley
4. Südöst Australien
5. Nord-Queensland
6. Neuseeland

Nähere Auskünfte werden in der nächsten Nummer der Mitteilungen veröffentlicht.

**NEWS OF THE COMMISSIONS
NOUVELLES DES COMMISSIONS
NEUES AUS DEN KOMMISSIONEN**

**Joint Meeting of Commissions II (Soil Chemistry) and IV (Soil Fertility)
Aberdeen, Scotland, 5—10 September, 1966**

As announced, arrangements are in hand for a joint meeting in Aberdeen under the auspices of the British Society of Soil Science, and details of the sessions and the post-conference tour in Scotland have already been sent to those who returned the Notice-of-intent issued in Bulletin No. 26. Any other members of the I.S.S.S. who require information may obtain it from the organising Secretary:

**Dr. J. Tinsley
Department of Soil Science
University of Aberdeen
Old Aberdeen, Scotland.**

All are reminded that the last date for registration is **1st June, 1966.**

**Réunion conjointe des Commissions II (Chimie du Sol) et IV (Fertilité du Sol)
Aberdeen, Ecosse, 5—10 Septembre 1966**

Comme annoncé, des arrangements sont prévus pour la réunion conjointe à Aberdeen qui se tiendra sous les auspices de l'Association Anglaise de la Science du Sol. Des détails concernant les séances et l'excursion en Ecosse après la conférence ont été envoyés à tous ceux qui ont retourné le formulaire intitulé „Intention de participer” inséré dans le Bulletin No. 26. Tout autre membre de l'A.I.S.S., désireux d'obtenir plus d'information, est prié de s'adresser au Secrétaire organisateur:

**Dr. J. Tinsley
Department of Soil Science
University of Aberdeen
Old Aberdeen, Scotland.**

Il est rappelé que le **1er Juin 1966** est la date ultime pour se faire inscrire.

**Gemeinsame Tagung der Kommissionen II (Bodenchemie) und IV
(Bodenfruchtbarkeit)**

Aberdeen, Schottland, 5.—10. September, 1966

Wie bereits mitgeteilt wurde, sind alle Massregeln getroffen worden für eine gemeinsame Tagung unter Leitung der British Society of Soil Science. Einzelheiten bezüglich der Sitzungen und der nach-Kongress Exkursion in Schottland sind denjenigen schon zugesandt worden, die das Anmeldeformular, wie im Bulletin No. 26 aufgenommen, zurückgeschickt haben. Etwaige anderen Mitglieder der I.B.G., die noch nähere Auskünfte haben möchten, werden gebeten sich dem Sekretär des Organisationskomitees zuzuwenden:

**Dr. J. Tinsley
Department of Soil Science
University of Aberdeen
Old Aberdeen, Scotland.**

Jeden wird daran erinnert, dass **1. Juni 1966** den letzten Tag für Registration ist.

Commission III (Soil Biology)

Commission III will organize a colloquium on the „Dynamics of Soil Ecology“, from September 5—10, 1966, in the Agricultural Research Centre (FAL), Braunschweig-Völkenrode, Western Germany.

1. Provisional Program:

- Monday, September 5, 1966: Welcome evening
- Tuesday, September 6, 1966: morning: Opening. Introductory Papers
afternoon: Discussion of the papers
- Wednesday, September 7, 1966: morning: Discussion of the papers
afternoon: Visit to Braunschweig e.g. „Naturhistorisches Museum“ or: „Biologische Bundesanstalt für Land- und Forstwirtschaft“
- Thursday, September 8, 1966: morning and afternoon: Discussion of the papers
evening: Session of the Executive Committee
- Friday, September 9, 1966: Day excursion to Northern Hesse and the Weser District
- A) Demonstration of fossil residues of soil life in loess; Guidance: Institute of Soil Science Göttingen, University
- B) Demonstration of the fauna in litter wood in the wildlife reserve on the Sababurg; Guidance: Institute of Forest Zoology of the Faculty of Forestry of Göttingen University at Hann. Münden
- Saturday, September 10, 1966: Visits to institutions of the FAL
- Sunday, September 11, 1966: Touristic excursion to the Harz Mountains or Lüneburger Heide

The number of presented papers may require, that also Wednesday afternoon must be used for the discussion. In that case the visits are also made on Saturday.

2.) **Papers:** The papers will be published in a similar manner as 1962 in Oosterbeek. Manuscripts are requested to be in English, French, or German, with English summaries for French and German papers. A limited size of 2000 words is recommended. The papers must be received before **April 30, 1966**, if they are to be printed in the „Proceedings“. Preprints will be sent to all participants 6 weeks before the meeting. The final registration will contain space for an extra address valid at this time.

The subject „Dynamics of Soil Ecology“ permits all branches of soil zoological research to be present at the meeting. Colleagues, dealing with methodological problems, may be interested to know, that Prof. Dr. O. Delamare-Deboutteville will hold a Colloquium on investigations and comparisons in methodics in spring 1967 at Brunoy (France).

3.) **Present preliminary registration:** Until now nearly 100 colleagues from all the world have announced their participation, 60 of which will present a paper.

4.) **Final registration and participation fee:** For further information please apply to the undersigned.

For the Organising Committee:

Dr. O. Graff

3301 Braunschweig-Völkenrode, Germany
Forschungsanstalt für Landwirtschaft

Commission III (Biologie du Sol)

La Commission III organisera une Conférence sur le „Dynamique de la faune du sol”, du 5 au 10 septembre 1966, dans le Centre de Recherches Agronomiques de Braunschweig-Völkenrode (FAL), Allemagne.

1. Programme provisoire:

- Lundi, le 5 septembre 1966: Soirée de salutation
- Mardi, le 6 septembre 1966
dans la matinée: Ouverture, conférences d'introduction
l'après-midi: Discussion des rapports
- Mercredi, le 7 septembre 1966
dans la matinée: Discussion des rapports
l'après-midi: Visitations en Braunschweig, p.e.: Musée d'Histoire Naturelle, Institut Fédéral Biologie pour l'Agriculture et la Sylviculture etc.
- Jeudi, le 8 septembre 1966
dans la matinée et l'après-midi: Discussion des rapports.
le soir: Réunion du Comité exécutif.
- Vendredi, le 9 septembre 1966: Excursion pour la Hesse du Nord et dans le bassin de la Weser:
A) Démonstration d'indices fossiles de la faune du sol en loess (Guide: L'Institut de Pédologie de l'Université Göttingen)
B) Démonstration de la faune du sol dans la réserve près du Château de Saba. (Guide: L'Institut pour la Zoologie Forestière de l'Université Göttingen à Hannoversch-Münden).
- Samedi, le 10 septembre 1966: Visitation des Instituts du Centre de Recherches Agronomiques de Braunschweig-Völkenrode (FAL)
- Dimanche, le 11 septembre 1966: Excursions touristiques pour le Harz ou pour les bruyères de Lüneburg

Selon le nombre des rapports communiqués peut-être il sera nécessaire de réserver aussi l'après-midi du mercredi pour faire des discussions. En ce cas il faudrait remettre les visites projetées au samedi.

2. Rapports: Nous avons l'intention de publier les rapports de la même manière comme il est fait en 1962 avec les rapports d'Oosterbeek. Ainsi, nous prions d'écrire les manuscrits en anglais, français ou allemand, en ajoutant aux rapports français et allemands un résumé anglais. Il est à propos de limiter l'étendue des rapports à 2 000 paroles au plus. Veuillez envoyer les manuscrits au plus tard jusqu'au 30 avril à l'adresse du signataire pourqu'on puisse les faire imprimer avant les sessions. Des „preprints” seront distribués à tous les participants six semaines avant la session. Pour cela veuillez indiquer votre adresse exacte pour le temps-là.

Le thème „Dynamique de la faune du sol” donne l'occasion que tous les disciplines de la biologie du sol peuvent porter la parole. Nous indiquons aux collègues intéressés à la Méthodologie, que M. le Professeur C. Delamare-Deboutteville tiendra un colloque sur les problèmes des recherches et des comparaisons méthodiques à Brunoy (S. & O.) au printemps 1967.

3. Nombre actuel des inscriptions préliminaires. Jusqu'aujourd'hui se sont annoncés au préalable environs 100 collègues du monde entier. Pareillement sont prévus 60 discours.

Pour des informations additionnelles prière de vous adresser au sous-signé:

Pour le comité d'organisation

Dr. O. Graff

3301 Braunschweig-Völkenrode, Allemagne
Forschungsanstalt für Landwirtschaft

Kommission III (Bodenbiologie)

Von der Kommission III wird ein Kolloquium über „Dynamik der Bodenlebensgemeinschaft“ organisiert in der Forschungsanstalt für Landwirtschaft, Braunschweig-Völkenrode, Deutschland, vom 5.—10. September 1966.

1. Vorläufiges Programm:

- Montag, 5. September 1966: Begrüßungsabend
- Dienstag, 6. September 1966: vormittags: Eröffnung, Einführungsvorträge
nachmittags: Diskussion der Beiträge
- Mittwoch, 7. September 1966: vormittags: Diskussion der Beiträge
nachmittags: Besichtigungen in Braunschweig z.B. Naturhistorisches Museum, Biologische Bundesanstalt für Land- und Forstwirtschaft
- Donnerstag, 8. September 1966: vormittags und nachmittags: Diskussion der Beiträge. Abends Sitzungen (Vorstand etc.)
- Freitag, 9. September 1966: Tagesexkursion nach Nordhessen und in das Wesergebiet:
A) Demonstration fossiler Spuren des Bodenlebens im Löss, (Führung: Institut für Bodenkunde der Universität Göttingen)
B) Demonstration über Lagerholzfauna im Naturschutzgebiet an der Sababurg (Führung: Institut für Forstzoologie der Forstl. Fakultät der Universität Göttingen in Hannoversch-Münden).
- Sonnabend, 10. September 1966: Besichtigungen von Einrichtungen der F.A.L.
- Sonntag, 11. September 1966: Touristische Exkursionen in den Harz oder/und die Lüneburger Heide

Wenn es die Zahl der eingehenden Referate verlangt, muss auch der Mittwochnachmittag für Diskussionen verwandt werden. Die Besichtigungen werden dann auf den Sonnabend verlegt.

Referate:

Es ist geplant, die Referate in ähnlicher Form zu veröffentlichen, wie es 1962 mit den Oosterbeeker Referaten geschah. Die Manuskripte erbitten wir in englischer, französischer oder deutscher Sprache. Den französischen und deutschen Referaten bitten wir eine englische Zusammenfassung beizugeben. Als Begrenzung der Referate sei ein Umfang von 2000 Worten empfohlen. Die Arbeiten müssen **spätestens** am 30.4. bei dem Unterzeichneten eingegangen sein, wenn sie in den Verhandlungen gedruckt werden sollen. Preprints werden allen Teilnehmern 6 Wochen vor der Tagung zugesandt, wir bitten deshalb um Angabe der in dieser Zeit gültigen Anschrift.

Das Rahmenthema „Dynamik der Bodenlebensgemeinschaft“ erlaubt es, alle Zweige der bodenbiologischen Forschung zu Worte kommen zu lassen. Diejenigen Kollegen, die sich mit methodologischen Fragen beschäftigt haben, seien darauf aufmerksam gemacht, dass Herr Professor Dr. C. Delamare-Deboutteville im Frühjahr 1967 in Brunoy ein Kolloquium abhalten wird, das Untersuchungen und Vergleichen über die Methodik gewidmet sein soll.

Stand der bisherigen, vorläufigen Anmeldungen:

Bis heute haben sich rund 100 Kollegen aus aller Welt vorläufig angemeldet. Die Zahl der in Aussicht gestellten Vorträge liegt bei 60.

Endgültige Anmeldung und Tagungsgebühren:

Weitere Berichte sind zu erhalten vom Unterzeichneten.

Für das Organisationskommittee:
Dr. Otto Graff, 3301 Braunschweig-FAL
Forschungsanstalt für Landwirtschaft

Conference on Mediterranean Soils (Commission V) Second Announcement

The final programme of the scientific meetings and excursions of the Mediterranean Soils Conference now reads as follows:

Meeting in Madrid

- Sept. 12 A.M.: Reception of participants
P.M.: Opening session
- Sept. 13 & 14: Scientific meetings
- Sept. 15 : Excursion offered by the Spanish Society of Soil Science
- Sept. 16 : Scientific meetings
- Sept. 17 A.M.: Scientific meeting
P.M.: Free afternoon
- Sept. 18 : Departure on tour.

A special programme will be offered to accompanying non-participants.

Communications

Participants presenting a paper are requested to send to the Secretariat at Madrid (Serrano 113) a summary of about 100 words before April 15th in one of the official languages of the Society. It is intended to distribute these summaries in a small volume to the participants in August next.

Larger abstracts of 1000 words, again in one of the official working languages, with illustrations or graphs and tables will be printed and distributed as a post-conference volume.

Tour (Spain only US \$ 105.—; Spain-Portugal US \$ 160.—)

Only a tour through Spain and Portugal is organized as too few people inscribed for the Spain-only excursion. These may join the present tour as far as Sevilla and return on September 24th to Madrid. The itinerary is the following:

- Sept. 18: Madrid—Bailén (340 km). Departure from Madrid in the morning and arrival at Bailén in the evening after a travel through the province de Toledo. Lunch at Ciudad-Real. Field studies: red mediterranean soils on diversified parent material; red soils with calcareous crust and hydromorphic soils.
- Sept. 19: Bailén—Granada (137 km). Departure from Bailén in the morning to arrive at Granada towards noon. Field studies: brown calcareous soils with concretions; terra rossa and red mediterranean soils with calcareous crust.
- Sept. 20: Granada—Córdoba (245 km). Departure from Granada in the morning, passing through the fertile plains of Granada up to the Torcal de Antequera for lunch. In the afternoon departure for Córdoba where profiles will be studied of chestnut soils of the Plain of Antequera; brown rendzina-like calcareous soils and red „lessivé” soils. Stay overnight at Córdoba and visit of that town.
- Sept. 21: Córdoba—Sevilla (149 km). Departure from Córdoba for Ecija and Marchena. Study of brown vertic soils; brown-red soils; vertisols; red „lessivé” soils and planosols. Stay overnight at Sevilla.
- Sept. 22: Sevilla—Huelva—Sevilla (200 km). Study of podzolic soils with pseudogley; polycyclic soils and peat soils. Lunch at Rábida.
- Sept. 23: Sevilla—Jerez—Sevilla (224 km). Study of the saline soils of Guadalquivir. Visit to the caves de Jerez. Lunch at Jerez and visits to points of touristic and scientific interest. Return to Sevilla, where the Spanish excursion is officially terminated.

End of Spanish tour

- Sept. 24: Sevilla—Rosal de la Frontera—Beja (250 km). Departure from Sevilla towards Rosal de la Frontera and Beja (Portugal). Field studies of brown mediterranean soils. Lunch at Aracena. Afternoon departure to Portugal. Profile study of red and black vertisols. Stay overnight at Beja.
- Sept. 25: Beja—Beja (150 km). Study of brown mediterranean soils transitional to vertisols; brown hydromorphic soils and planosols. Stay overnight at Beja.

- Sept. 26: Beja—Monte Gordo (145 km). Visit of Erosion Experiment Station. Study of lithosols on schists.
- Sept. 27: Monte Gordo—Sagres (216 km). Profile study of red and brown calcareous soils; red yellow mediterranean soils (from several calcareous and non calcareous materials); brown mediterranean soils (from non calcareous materials) and acid brown soils.
- Sept. 28: Sagres—Lisboa (265 km). Profile study of red yellow mediterranean soils with plinthite; brown mediterranean soils and podzols. Stay overnight at Lisboa.
- Sept. 29: Lisboa. Visits to points of touristic and scientific interest. Evening: end of the excursion.
- Sept. 30: Lisboa—Madrid (660 km) for those who wish to take off their return journey from Madrid. The meals en route that day are for the account of the participants and are not included in the price of the excursion.

Payment

The inscription fee of twenty US-dollars has to be paid to Wagons-Lits Cook at Madrid before April 1st.

For accompanying non-participants a fee of US \$10 is charged to cover additional costs of entertainment.

Payment of the total costs must be effected before July 1st to the above mentioned branch of Cook.

Visas

A visa may be obtained through consulate or embassy, or, in case no official Spanish representative is stationed in some country, with the intermediary of the Secretary-General of the I.S.S.S. from the Spanish Embassy at The Hague, Netherlands. Applicants should, however, be officially registered as participants.

Conférence sur les sols méditerranéens (Commission V)

Deuxième Communication

Le programme définitif suivant a été adopté pour les réunions scientifiques et les excursions de la Conférence sur les sols méditerranéens:

La réunion à Madrid

- Sept. 12 matin: Réception des participants
après-midi: Séance inaugurale
- Sept. 13 & 14: Réunions scientifiques
- Sept. 15 : Excursion offerte par la Société Espagnole de la Science du Sol
- Sept. 16 : Réunions scientifiques
- Sept. 17 matin: Réunion scientifique
après-midi: Libre

Un programme spécial sera prévu pour les accompagnants.

Communications

Les participants qui présentent une communication sont priés d'envoyer au Secrétariat (Serrano 113, Madrid) un résumé d'environ 100 mots avant le 15 Avril. La langue doit être une des langues officielles de l'A.I.S.S. Le Comité a l'intention de les distribuer aux participants au cours du mois d'Août prochain.

De plus longues résumés, ne dépassant pas 1000 mots et écrits dans une des langues officielles de l'A.I.S.S., avec illustrations ou figures et tableaux, seront imprimés et distribués comme une publication d'après-Conférence.

L'excursion

Etant donné le peu d'intérêt pour l'excursion en Espagne (no. II), il y aura seulement l'excursion en Espagne et Portugal (no. I). Ceux qui se sont faits inscrire pour l'excursion no. II, peuvent prendre part à la partie de l'excursion no. I qui se déroulera en Espagne et retourner à Madrid dans le matin du 24 Septembre.

Le programme est comme suit:

- 18 *Septembre* Madrid—Bailén (340 Kms.). Départ de Madrid le matin et arrivée à Bailén le soir, en traversant la province de Toledo. Déjeuner à Ciudad-Real. Observation des profils de sols rouges méditerranéens sur différents matériaux géologiques; sols rouges à croute calcaire et sols hydromorphes.
- 19 *Septembre* Bailén—Granada (137 Kms.). Départ de Bailén le matin et arrivée à Granada vers midi. Observation des sols bruns calcaires à nodules; Terra Rossa et sols rouges méditerranéens à crôte calcaire.
- 20 *Septembre* Granada—Córdoba (245 Kms.). Départ de Granada le matin. Parcours de la plaine fertile de Granada, montée au Torcal de Antequera et déjeuner. L'après-midi départ vers Córdoba, où on étudiera des sols chatains de la plaine d'Antequera; sols bruns calcaires rendziniformes et sols rouges lessivés. Logement à Córdoba et visite de la ville.
- 21 *Septembre* Córdoba—Sevilla (149 Kms.). Départ de Córdoba vers Ecija et Marchena. Examen de sols bruns vertiques; sols brun-rouges; vertisols; sols rouges lessivés et planosols. Logement à Sevilla.
- 22 *Septembre* Sevilla—Huelva—Sevilla (200 Kms.). On étudiera des sols rouges lessivés; sols podsoliques à pseudogley; sols polycycliques, et sols tourbeux. Déjeuner à la Rábida.
- 23 *Septembre* Sevilla—Jerez—Sevilla (224 Kms.). Le matin on examinera les sols salins du Guadalquivir; visite aux caves de Jerez et déjeuner dans cette ville. Le soir retour à Sevilla et visite de la ville.

Fin de l'excursion en Espagne

- 24 *Septembre* Sevilla—Rosal de la Frontera—Beja (250 Kms.). Départ de Sevilla en direction de Rosal de la Frontera et Beja (Portugal). On étudiera des sols bruns méditerranéens; déjeuner à Aracena. L'après-midi départ vers le Portugal. Observation de profils des vertisols rouges et noirs. Logement à Beja.
- 25 *Septembre* Beja—Beja (150 Kms.). Observation de sols bruns méditerranéens évolués vers des vertisols; sols bruns hydromorphes et planosols. Logement à Beja.
- 26 *Septembre* Beja—Monte Gordo (145 Kms.). Visite à une Station Expérimentale d'érosion. Observation de lithosols sur schistes.
- 27 *Septembre* Monte Gordo—Sagres (216 Kms.). Observation de profils de „Red and Brown Calcareous Soils”; „Red-Yellow mediterranean Soils (from several calcareous and non calcareous materials)”; „Brown Mediterranean Soils (from non calcareous materials)” et „Sols Bruns Acides”.
- 28 *Septembre* Sagres—Lisboa (265 Kms.). Observation de profils de „Red-Yellow Mediterranean Soils (avec plinthisite)”; „Brown Mediterranean Soils et Podzols”. Logement à Lisboa.
- 29 *Septembre* Lisboa. Diverses visites touristiques et scientifiques et le soir fin de l'excursion.
- 30 *Septembre* Lisboa—Madrid (660 Kms.), pour les personnes désirant effectuer le retour via-Madrid. Les repas en route, pour ce jour, ne sont pas inclus dans le prix de l'excursion.

Paiement

Les frais d'inscription de vingt US-Dollars peuvent être remis à l'Agence de Wagons-Lits/Cook, Madrid, avant le 1er Avril.

Pour les accompagnants, la somme de dix Dollars suffira pour couvrir en partie les frais du programme récréatif.

Le total des frais devra être remis à l'Agence avant le 1er Juillet.

Visas

Un visa peut être obtenu du consulat ou l'ambassade, ou, en cas que l'Espagne n'a pas de représentation officielle dans un pays, par l'intermédiaire du Secrétaire Général de l'A.I.S.S. de l'Ambassade Espagnole à La Haye, Hollande. Il faudra alors qu'on s'est fait inscrire définitivement.

Konferenz über Mediterrane Böden (Kommission V)

Zweite Mitteilung

Das endgültige Programm der wissenschaftlichen Tagungen und Exkursionen der Konferenz über mediterrane Böden lautet wie folgt:

Tagung in Madrid

- Sept. 12 vormittags: Empfang der Teilnehmer
nachmittags: Eröffnung der Tagung
- Sept. 13 & 14 : wissenschaftliche Sitzungen
- Sept. 15 : Exkursion angeboten von der Spanischen Bodenkundlichen
- Sept. 16 : Gesellschaft
- Sept. 17 vormittags: wissenschaftliche Sitzungen
nachmittags: wissenschaftliche Sitzung
- Sept. 18 : frei
Abreise zur Exkursion.

Ein spezielles Programm wird den begleitenden Nicht-teilnehmern angeboten werden.

Mitteilungen

Teilnehmer, welche einen wissenschaftlichen Beitrag liefern, werden gebeten eine Zusammenfassung von ungefähr 100 Wörtern vor 15. April den Sekretariat in Madrid (Serrano 113) zukommen zu lassen. Der Beitrag soll in einer der offiziellen Sprachen der I.B.G. abgefasst sein. Es wird beabsichtigt diese Zusammenfassungen in einer kleinen Schrift den Teilnehmern in August zuzusenden.

Grössere Auszüge von ungefähr 1000 Wörtern, ebenso in einer der offiziellen Sprachen, mit Abbildungen oder Grafiken und Tabellen werden gedruckt und distribuiert als ein nachträgliches Ganzes.

Exkursion

Nur eine Exkursion durch Spanien und Portugal ist organisiert worden da zu Wenige sich für die rein spanische Tour angemeldet haben. Letztere können sich der heutigen Exkursion bis Sevilla anschliessen und 24. September nach Madrid zurückfahren.

Das Reiseprogramm ist folgendes:

- Sept. 18: Madrid—Bailén (340 km). Abreise von Madrid morgens und Ankunft abends in Bailén nach einer Durchquerung der Provinz Toledo. Mittagessen in Ciudad-Real. Beobachtungen im Gelände: rote mediterrane Böden auf verschiedenem Muttermaterial; rote Böden mit Kalkkruste und hydro-morphe Böden.
- Sept. 19: Bailén—Granada (137 km). Abreise von Bailén morgens, Ankunft in Granada gegen Mittag. Beobachtungen im Gelände: braune kalkhaltige Böden mit Konkretionen, Terra Rossa und rote mediterrane Böden mit Kalkkruste.
- Sept. 20: Granada—Córdoba (245 km). Abreise nach Granada des Morgens durch die fruchtbaren Ebenen von Granada bis zum Torcal de Antequera, wo Mittagessen. Nachmittags Abreise nach Cordoba. Bestudierung Bodenprofile von kastanienfarbigen Böden der Antequera Ebene; braunen, rendzina-artigen kalkhaltigen Böden und roten lessivierten Böden. Übernachtung in Cordoba und Besuch dieser Stadt.
- Sept. 21: Córdoba—Sevilla (149 km). Abreise von Cordoba nach Ecija und Marchena. Studium brauner vertisolischen Böden; braun-rote Böden; Vertisole; rote lessivierte Böden und Planosole. Übernachtung zu Sevilla.
- Sept. 22: Sevilla—Huelva—Sevilla (200 km). Bestudierung von podsoligen Böden mit pseudogley; polyzyklischen Böden und Torfböden. Mittagessen in Rábida.
- Sept. 23: Sevilla—Jerez—Sevilla (224 km). Beobachtung von salzigen Böden des Guadalquivir. Besuch der Grotten von Jerez. Mittagessen zu Jerez und Besuch von touristisch und wissenschaftlich interessanten Punkten. Zurückreise nach Sevilla wo die spanische Exkursion offiziell beendet ist.

Ende der spanischen Exkursion

- Sept. 24: Sevilla—Rosal de la Frontera—Beja (250 km). Abreise von Sevilla nach Rosal de la Frontera und Beja (Portugal). Beobachtungen im Gelände von braunen mediterranen Böden. Mittagessen in Aracena. Nachmittags Abreise nach Portugal. Profilstudium von roten und schwarzen Vertisolen. Übernachtung in Beja.
- Sept. 25: Beja—Beja (150 km). Bestudierung brauner mediterranen Übergangsböden nach Vertisolen; brauner hydromorphen Böden und Planosole. Übernachtung in Beja.
- Sept. 26: Beja—Monte Gordo (145 km). Besuch der Erosionsversuchsstation Studium von Lithosolen auf Schist.
- Sept. 27: Monte Gordo—Sagres (216 km). Profilstudium roter und brauner kalkhaltigen Böden; rot-gelber mediterranen Böden (auf unterschiedenem kalkhaltigen und kalkfreien Muttergestein); brauner mediterranen Böden (auf kalkfreiem Gestein) und saurer Braunerden.
- Sept. 28: Sagres—Lisboa (265 km). Beobachtung von Profilen von rot-gelben mediterranen Böden mit Plinthit; brauner mediterranen Böden und Podsolen. Übernachtung zu Lisboa.
- Sept. 29: Lisboa.. Besuch von touristisch und wissenschaftlich interessanten Punkten. Abends: Ende der Exkursion.
- Sept. 30: Lisboa—Madrid (660 km). Für diejenigen, die ihre Rückreise in Madrid anfangen möchten. Während dieser Rückreise müssen die Speisenkosten von den Teilnehmern persönlich bezahlt werden. Diese sind nicht im Exkursionsbeitrag miteinbegriffen.

Zahlung

Das Einschreibungsgebühr von US \$ 20.— soll vor 1. April bei Wagons Lits/Cook zu Madrid einbezahlt sein.

Für begleitenden Nicht-teilnehmer ist US \$ 10.— zu zahlen als Beitrag in den Extrakosten des speziellen Programms.

Der Restbetrag für Teilnahme an die Exkursion ist an das Reisebüro Cook zu Madrid zu zahlen vor 1. Juli.

Visa

Ein Visum kann erhalten werden vom Konsulat oder der Botschaft. Wenn kein offizieller Vertreter Spaniens in irgendeinem Lande akkreditiert ist, kann das Visum, mittelst dem Generalschriftführer der I.B.G., von der Spanischen Botschaft in Den Haag, Niederlande, erhalten werden. Immerhin sollten Interessenten offiziell als Teilnehmer registriert worden sein.

NEWS OF THE NATIONAL SOCIETIES
NOUVELLES DES SOCIETES NATIONALES
NEUES DER GESELLSCHAFTEN IN EINZELNEN LÄNDERN

Soil Science Society of America

Dr. Roy W. Simonson has been appointed SSSA representative to the ISSS Council, succeeding Dr. M. B. Russell whose term expired at the close of the VIII Congress in Bucharest. Dr. Simonson will serve in this capacity through the IX Congress to be held in Adelaide.

The Executive Secretary-Treasurer of S.S.S.A. reports the following:

The 57th Annual Meeting of the American Society of Agronomy was held October 31 to November 4, 1965, in Columbus, Ohio, concurrently with its two associated societies, the Crop Science Society of America, holding its 10th annual meeting, and the Soil Science Society of America, holding its 29th Annual Meeting. The total attendance of 2527 was another record number and included 1584 members, 312 graduate students, 105 undergraduate students, 150 ladies, and 376 other guests.

The featured attraction at the meeting was a symposium on "Our Heritage of Land and Water Resources". The participants were Cecil W. Wadleigh, Soil Conservation Research Division, USDA; Marion Clawson, Resources for the Future; Keith S. Krause, Public Health Service, DHEW; and L. E. Partain, Soil Conservation Service, USDA. ASA President L. A. Richards presided at the symposium which was arranged by H. H. Kramer, President-elect. The four papers dealt with the magnitude and use-potentials of various natural resources, the competitive pressures for alternative uses by a growing population, the precautions needed to ensure the protection and availability of the resources, and the opportunities for amenities living which should ensue from prudent planning.

The papers in the symposium will be published as an issue in the ASA Special Publication Series and will be available in early 1966. Single copies will be sent to all members of the three associated societies and to others who request them from the Headquarters Office, 677 S. Segoe Road, Madison, Wis. 53711. Additional copies will be sold at a nominal cost.

About 550 volunteer papers were presented by society members in 80 program sessions. These sessions were arranged according to the subject matter covered by the 18 Divisions of the three societies. Many of them will be printed in the three society journals: AGRONOMY JOURNAL, CROP SCIENCE, and SSSA PROCEEDINGS.

Business affairs of the societies were transacted in the meetings of the Boards of Directors and in the General Meetings presided over by the respective presidents: L. A. Richards, U.S. Salinity Laboratory, Riverside, Calif., for ASA; P. H. Harvey, North Carolina State Univ., Raleigh, N. C. for CSSA; and R. W. Pearson, USDA, Auburn University, Auburn, Ala., for SSSA.

Two prominent scientists spoke at a joint program following the General Meetings of the Crop Science Society and the Soil Science Society. R. W. Allard, University of California at Davis, was the invited speaker for CSSA and spoke on the subject "On Organization at the Population Level". Sterling B. Hendricks, Mineral Nutrition Laboratory, USDA, Beltsville, Md., was invited by the SSSA to speak on the subject "About Phosphorus, Potassium, Calcium, and Iron Entry into Roots".

At the General Meeting of the American Society of Agronomy two distinguished members spoke on the subject "Role of ASA in Relation to Agronomic Industry". The "academic view" was presented by J. B. Peterson, Head, Department of Agronomy, Purdue University. The "industry view" was given by W. C. Heckendorn, recently retired Executive Vice President, American Seed Trade Association, Washington, D. C. After his talk, Mr. Heckendorn was given a surprise presentation of an award from the members of ASA in appreciation for his many years of promoting effective cooperation between the seed trade and the American Society of Agronomy.

The presidential address by L. A. Richards at the ASA Annual Dinner and President's Program was entitled "Our Society and The Future". The Executive Secretary-Treasurer, Matthias Stelly, gave a brief report on the 1965 Annual Meeting

and on the continual growth of the society in membership and number of publications, in services rendered, and in financial assets.

The annual society recognitions and awards were also made at the President's Program. Twenty-seven new Fellows of the Society were presented this highest honor of the society in recognition of their outstanding scientific accomplishments and their services to the society. The four annual ASA Achievement Awards for meritorious accomplishments in the four branches of agronomic endeavor were announced. Willard H. Garman, Vice President for Agronomy of the National Plant Food Institute, was named for the Agronomic Service Award. The Crop Science award went to J. B. Hanson, the Soil Science Award to Arnold Klute, and the Agronomic Education Award to S. R. Aldrich. All three of these are members of the Department of Agronomy, University of Illinois. The Crops & Soils Award for excellence in agricultural journalism was presented to J. B. Newman and B. O. Blair, Purdue University, for their jointly authored article in CROPS & SOILS MAGAZINE entitled, "What is the Energy Balance in Your Corn Field?"

The new presidents of the three societies who advanced to the top offices at the meetings are: H. H. Kramer, Univ of Nebraska, for ASA; J. R. Harlan, Oklahoma State University, for CSSA; and W. P. Martin, University of Minnesota, for SSSA.

New Presidents-elect, chosen by mail balloting, were announced as follows: for ASA, R. S. Whitney, Colorado State University; for CSSA, A. A. Hanson, U.S. Department of Agriculture, Beltsville, Md.; and for SSSA Frank G. Viets, Jr., USDA, Fort Collins, Colo.

Twenty five well-known industrial and commercial firms and eight federal, state and university departments displayed interesting and informative exhibits of their products and service. Twenty-six publishers displayed a record number of their important books on subjects related to crop science and soil science. These displays represented on of the best shows ever held by the society.

Two new numbers in the ASA Monograph Series, published in 1965, were displayed and promoted at these meetings. Monograph No. 9, Methods of Soil Analysis, is the first two-part publication in this series and is proving highly popular. The first part is entitled "Physical and Mineralogical Properties, Including Statistics of Measurement and Sampling". The second part is "Chemical and Microbiological Properties". Much interest was shown in Monograph No. 10, Soil Nitrogen, which was written by authors in six countries and covers all aspects of this important subject. A complementary book on Anhydrous Ammonia, to be published in 1966, will treat the subject of nitrogen as it relates to nitrogen fertilizers. The only translation of a foreign scientific journal published in English by the Soil Science Society, with financial assistance from the National Science Foundation, was prominently displayed during the meetings. This journal is Soviet Soil Science, an English edition of Pochvovedeniye.

The ASA Placement Service again provided the opportunity for a large number of prospective employers and employees to come together for over 2000 appointments and interviews in the four-day period. Both the "open" and "confidential" types of service were offered and were greatly appreciated by the employers and applicants. This service is provided on a year-round basis to all society members and to any potential employer at the meetings or through the Headquarters Office. It includes the young scientists about to graduate or just graduated and for over two years it has also helped Emeritus Members render further valuable contributions to the profession in the U.S. and abroad.

The Local Arrangements Committee were enlisted from the Department of Agronomy of Ohio State University on the local campus and at the Agricultural Research and Development Center in Wooster. The important role played by the local groups in the success of a meeting is well known. The General Chairman of the Committee was G. W. Volk, Chairman of the Agronomy Department. Chairmen of the various subcommittees were: L. P. Wilding, L. C. Saboe, G. S. Taylor, F. L. Himes, E. W. Stroube, D. A. Ray, R. W. Miller, G. R. Gist, H. E. Shoemaker, S. R. Anderson, N. Holowaychuk, and L. N. Shepard.

The record numbers of members and guests at these meetings reflect again the continued growth of the three societies. Joint membership in the American Society of Agronomy is held by all members of the Crop Science Society of America and of the Soil Science Society of America. The over-all membership in the American Society of Agronomy now stands at more than 5700. Of these, 28 percent attended the annual meetings in 1965.

The next annual meeting held jointly by the societies will be on the campus of Oklahoma State University, Stillwater, Oklahoma, August 21—26, 1966. The 1967 meetings will be held November 5—10 at the Sheraton Park Hotel and Shoreham Hotel in Washington, D. C. Without doubt, each of these meetings will set attendance records, as has been true in each of the past five years.

Matthias Stelly, Executive Sec.-Treas.

Bulgarian Soil Science Society

At the annual meeting of the Bulgarian Soil Science Society, which took place on the 26th of February 1965, a presidium with the following members was elected:

President, Dr. I. P. Garbouchev, director of the „N. Poushkarov” Institute of Soil Science,

vice-presidents: Prof. V. Koinov, „N. Poushkarov” Institute
Prof. K. Enikov, Academy of Agricultural Sciences

secretary: Dr. L. Raikov, „N. Poushkarov” Institute

members: Prof. V. Galeva, „N. Poushkarov” Institute
Prof. B. Kolcheva, „G. Dimitrov” School of Agriculture
Dr. Hr. Trashliev, „N. Poushkarov” Institute and
T. Totev, assistant, „G. Dimitrov” School of Agriculture

The Soil Science Society took part in the scientific session on the raising of soil fertility organized by the Academy of Agricultural Sciences and the „N. Poushkarov” Institute of Soil Science on the 12th and 13th of March 1965. At this session 14 reports and scientific communications were read and discussed by a great number of pedologists, agronomists and other specialists from the whole country.

The summarizing report on „General directions for raising the fertility of the soils in Bulgaria” was delivered by Dr. I. Garbouchev. The following problems were discussed in the other reports: soil resources in Bulgaria and some of their characteristics; valuation of the soils according to their natural fertility; usage of nitrogen, phosphorites and potassium fertilizers according to soil properties; usage of microelements, organic and bacterial fertilizers; importance of the crop rotation and soil cultivation for raising the fertility of the soil in Bulgaria; maintenance of the irrigation lands; the fight against erosion and improving the fertility of eroded lands; liming of acid soils; raising the fertility of heavy and saline soils.

Soil Science Society of the Netherlands

The Board of this Society has decided that its President will act „qualitate qua” as the representative in the council of the I.S.S.S. Dr. A. P. A. Vink is now serving in this capacity.

Société Nationale Roumaine de la Science du Sol

La Société Nationale Roumaine de la Science du Sol, compte aujourd'hui 476 membres actifs, qui travaillent dans le domaine de l'étude de la fertilisation et de l'utilisation rationnelle du sol.

Le Conseil de Direction de la Société est composé de 21 membres, à savoir:

Président: Gh. Ionescu-Sisesti

Vice-Présidents: N. Cernescu
Gr. Obrejanu
C. Chirita

Secrétaire général: D. Davidescu

Secrétaire: D. Teaci

Membres: N. Bucur, M. Botzan, A. Canarache, St. Cirstea, N. Florea, L. Gustiuc, N. Hulpoi, I. Maxim, M. Motoc, M. Nemes, Cr. Oprea, P. Papacostea, C. Paunescu, M. Povovat, Ir. Staicu.

L'activité de la Société se déroule dans le cadre de 5 filiales régionales et 4 commissions de spécialité:

- I-ère Commission: Physique, technologie et amélioration du sol;
- II-ème Commission: Chimie, minéralogie et biologie du sol;
- III-ème Commission: Fertilité du sol et nutrition des plantes;
- IV-ème Commission: Genèse, cartographie et classification du sol.

La Direction de la Société invite toutes les Sociétés Nationales à une collaboration étroite pour l'essor de la science du sol dans le monde.

Society of Soil Science of South Africa

This Society held a highly successful conference in Pretoria during 19—21 July, 1965, attended by well over 100 people, whereas 40 papers of high quality were presented. At a General Meeting the following Committee of Management was elected:

- Chairman : Dr. J. van Garderen
- Vice-Chairman: Prof. W. J. Fölscher
- Members : Dr. R. F. Loxton
Dr. H. van der Watt
- Secretary : Mr. G. Murray

Dr. R. F. Loxton is the representative in the Council of the I.S.S.S.

Société Yougoslave de la Science du Sol

La réunion annuelle de cette Société a eu lieu à Belgrade du 7 au 9 juin 1965. A cette occasion, hommage fut rendu à M.le Prof. Stevan Nikolic en commémoration de son 70^{me} anniversaire et des 45 années qu'il a agi comme Président de la Société Yougoslave. Le thème scientifique de la réunion était „le contrôle de la fertilité du sol”. La dernière journée était réservé pour une visite aux champs d'expérience en SR Serbia.

Les nouveaux membres du Bureau de la S.Y.S.S. élus sont les suivants:

- Président: Prof. Dr. A. Skoric, Faculté d'Agronomie, Zagreb
- Vice-présidents: Prof. Dr. M. Ciric, Faculté d'Agronomie, Sarajevo
Dr. M. Pantovic, Faculté d'Agronomie, Beograd-Zemun
Inz. A. Stojkovska, Faculté d'Agronomie, Skopje
Inz. M. Leskosek, Faculté d'Agronomie, Ljubljana
- Secrétaire: Dr. M. Todorovic, Faculté d'Agronomie, Beograd-Zemun
- Trésorier: Dr. Z. Racz, Faculté d'Agronomie, Zagreb
- Représentant dans le Conseil de l'A.I.S.S.: Prof. Dr. A. Skoric, Faculté d'Agronomie, Zagreb

INTERNATIONAL CONFERENCES OF ALLIED SCIENCES
CONGRES INTERNATIONAUX DE SCIENCES CONNEXES
INTERNATIONALE KONGRESSE VON VERWANDTEN WISSENSCHAFTEN

International Water Symposium

In Bulletin Nr. 27, page 11, it was communicated that the ICID planned to organize in Prague, Czechoslovakia, a symposium as from 3—6 October, 1966. In view however of the fact that Unesco will hold a 1966 International Hydrological Decade Conference in Wageningen, Netherlands, the Prague meeting is postponed till 6—12 June, 1967.

Symposium on water in the unsaturated zone

Organized by Unesco and the Government of the Netherlands
with the co-operation of FAO, IASH and ISSA
Wageningen, 19—25 June 1966

A. Origin and purpose of the symposium

This symposium will be organized within the framework of the International Hydrological Decade. The purpose of it is the presentation and discussion of original papers on different problems related to soil moisture and to transport of water under unsaturated conditions, with special reference to its significance as part of the hydrological cycle, and its relations to groundwater.

The symposium is intended to bring together the concepts existing in hydrology and soil physics.

B. Date and place of the symposium

The symposium will be held in Wageningen, the Netherlands, from June 19th to and including June 25th 1966. The afternoon of Sunday June 19th and the morning of Monday June 20th will be used for the registration of the participants.

Four days will be reserved for the presentation of communications and for discussions. One field trip will be organized during the symposium and one additional excursion is being considered for the Monday and Tuesday following the symposium.

C. Scientific organization

The papers presented at the symposium will be preprinted by the organizing committee in co-operation with Unesco. The papers will be distributed to the participants before the meeting. In order that all papers constitute an ordered programme, the scientific organization is in the hands of the Netherlands organizing committee in consultation with Unesco.

D. Provisional programme

Communications will be divided in the following sections:

I. Characterization of soil physical factors

- a. Determination of soil moisture (Laboratory and field methods)
- b. Determination of capillary conductivity and diffusivity (Methods and relations to soil moisture and suction)
- c. Relation between soil characteristics and soil properties (Relation of capillary conductivity, diffusivity and soil moisture retention curves to soil physical and chemical properties).

II. Water transport in unsaturated soils (Vertical flow)

- a. Infiltration and redistribution of soil moisture following precipitation, irrigation and artificial recharge
- b. Supply of water by capillary rise from groundwater
- c. Evaporation from bare soils and accumulation of salts
- d. Extraction of soil moisture by plants
- e. Influence of temperature on the transport of water.

III. Relation of unsaturated flow to groundwater problems

- a. Rate of recharge of groundwater following precipitation and its influence on groundwater flow
- b. Artificial recharge of groundwater
- c. Effect of the capillary fringe on groundwater flow
- d. Storage capacity.

E. Participation

Unesco will send invitations to selected scientists to present papers. In addition, FAO, IASH, and ISSA will send out notices through their regular channels, requesting scientists to submit communications.

1. Correspondence

All correspondence concerning the symposium should be addressed to:
Ir. P. E. Rijtema, Secretary of the Unesco-Netherlands Government symposium on water in the unsaturated zone
Institute for Land and Water Management Research
P.O. Box 35, Wageningen, the Netherlands

First Congress on Waterproblems in Rural Areas

The Confederación Rural del Agua de Buenos Aires y La Pampa will organize a congress on water problems in November 1966 in Buenos Aires. The programme shows the following subjects:

1. Water erosion.
2. Inundation, floods and water conservation.
3. Subterranean water, its quality, exploitation and recharge.
4. Economy and use of water.

Interested members are requested to contact the Secretary of the Congress, Dr. Alberto A. Gandara, Rivadavia 1340, Piso 4e, Buenos Aires, Argentina.

Gesellschaft Deutscher Chemiker

The Section Analytical Chemistry of the German Chemists Society will organize a meeting from 13—15 April 1966 in Lindau (Bodensee) conjointly with the Austrian Society of Micro- and Analytical Chemistry and the Swiss Society of Analytical and Applied Chemistry. Major subjects are: Automation of analytical methods; Analysis of Trace Elements; Analytical Procedures of structure determination.

Second Latin-American Congress on Soil Biology

In concurrence with Unesco's Department of Science, the second Latin-American Congress on Soil Biology will be held in July 1967 in the Federal University of Santa Maria, Rio Grande do Sul, Brasil. The programme will be:

Part I: Fundamental investigations:

- 1) Soil Microbiology and its Ecology
- 2) Soil Bio-Geography
- 3) Ecology of Plant Parasites
- 4) Humus

Part II: Synthetic investigations:

- 1) Correlation Soil-Plant
- 2) Soil Biocenosis and Plant Nutrition
- 3) General Ecology: Soil, Microlife, Plant, Climate
- 4) Restoration of Soil Productivity.

President of the Congress is Prof. Dr. A. Primavesi. The languages are: English, French, Portuguese and Spanish. Papers have to be original. They should not exceed 2400 words and be in hands of the Organizing Committee not later than March 31, 1967.

For further information please apply to: Prof. Dr. A. Primavesi, Instituto de Solos e Culturas, Caixa Postal 272, Santa Maria, Rio Grande do Sul, Brasil.

World Meteorological Organization

The W.M.O. organizes a Seminar on Agrometeorology in Melbourne, Australia, in November 1966. Lectures will be given on the following main subjects: Plant and animal physiology and the weather; macroclimatology of plant communities; microclimatology and soil climate and agrometeorological methods.

Abridged report from the Fourth Session of the Commission for Climatology (CCI), in Stockholm, 12th—26th August, 1965

About 70 delegates from 47 countries took part in the conference, also various observers, some of whom represented international organizations, amongst which the International Society of Soil Science.

Reports and resolutions covering 28 topics were discussed at the meetings, but there was no discussion on the relations between climate and soil as a separate topic.

A report of the conference will be published by WMO in its series of "Reports", and a further article will be issued in WMO's publications "Technical Regulations" (No. 49, BD. 2/3) and "Guide to Climatological Practices" (No. 100, TP. 44). The work of some study groups has been so thorough and comprehensive that the conference decided that it should be published as separate "Technical Notes". As examples of such work may be cited the reports on "Climatic Fluctuations" and "Statistical Methods in Climatology".

The conference recommended that WMO should convene symposia in the subjects "Data Processing for Climatological Purposes", "Applied Climatology" and "Marginal Land Climatology", of which the last two will be of interest for soil scientists.

It was recommended that meteorologists should join with the national IBP committees during the International Biological Year (IBP), for discussions on the topic "Human Bioclimatology". The conference was informed that in the U.S.A. there was being prepared a bibliography of the instrumentation and methods used in the field of Microclimatology, which would be distributed to the members of CCI.

The first of the FAO - UNESCO - WMO projects in agricultural climatology for semi-arid and arid regions is reviewed in Technical Note No. 56. CCI recommended that more projects of this type should be set up. Soil research is an important part of these investigations.

Under the heading "Modification of Weather and Climate" was mainly discussed the influence on the climate of the rapid growth of urban and industrial areas which is now taking place. The establishment of more "Urban Stations" is considered to be of the greatest importance. By means of such stations, the chemical composition of the air in terms of the proportion of CO₂ and SO₂ may be observed. Of the greatest importance also is the establishment of reference climatic stations in regions which have not been influenced by man. Observatories on isolated peaks or on remote islands have had the name "CO₂ stations" recommended for them.

The committee recognized the need for a Technical Note dealing with the methods of obtaining the different constituent factors of the heat balance. It was not possible to recommend a sure method of measuring the minimum temperature at the soil surface. However, there seemed to be possibilities of developing further the use of instruments employing an infra-red beam. Finally, it may be mentioned that regional climate maps are being prepared for use in agricultural meteorology.

As was mentioned earlier, few points of direct contact with the activities of ISSS were found in the Fourth Session of CCI, although many of the projects set up by CCI (and WMO) are nevertheless of great interest for our Society.

October 28, 1965.

Carl Olof Tamm
Hans Odin

Symposium on permeability and capillarity

A symposium on permeability and capillarity for soils and rock will be held in association with the Annual Meeting of the American Society for Testing and Materials during the last week of June 1966. The symposium will be sponsored by ASTM Committee D-18 on Soils and Rocks for Engineering Purposes, and will be held in Chalfont-Haddon Hall, Atlantic City, New Jersey.

The symposium will describe permeability and capillarity testing techniques — as used in engineering, agriculture, geology, and hydrology — and their application to engineering problems associated with soil and rock materials. The interdisciplinary program is divided into two sessions; the first emphasizing laboratory testing techniques, the second emphasizing field techniques and applications.

Tentative Program

Friday, July 1, a.m.

Introduction to Symposium — A. I. Johnson, Chief, Hydrologic Laboratory, U.S. Geological Survey, Denver, Colo.

Abnormalities in Hydraulic Flow Through Fine-Grained Soils — James K. Mitchell and J. Scott Younger, Department of Civil Engineering, University of California, Berkeley 94720.

Air and Water Permeability of Compacted Soils — E. L. Matyas, Assoc. Professor, Department of Civil Engineering, University of Waterloo, Ontario, Canada.

Hydraulic Properties of Disturbed and Undisturbed Earth Materials — Arthur T. Corey, Professor of Agricultural Engineering, Agricultural Engineering Dept., Colorado State University, Fort Collins, Colorado.

An Apparatus for Measuring the Hydraulic Conductivity of Undisturbed Samples — K. E. Wit, Instituut voor Cultuurtechniek en Waterhuishouding, P. O. Box 35, Wageningen, Netherlands.

Methods for Determining Capillary Conductivity and Soil-Water Diffusivity — E. J. Doering, Agricultural Engineer, Northern Great Plains Research Center, U.S. Department Agriculture, P. O. Box 459, Mandan, North Dakota 58554.

Friday, July 1, p.m.

Change in Suction During Undrained Compression of Partially Saturated Soil — J. D. Scott, Visiting Scientist, Soil Mechanics Section, Division of Building Research, National Research Council, Ottawa 2, Ontario, Canada.

A Method for Measuring the Saturated and Unsaturated Permeability of Soils — W. P. M. Black, Road Research Laboratory, Ministry of Transport, Harmondsworth, West Drayton, Middlesex, England.

Physical Properties and Fluid Flow in Petroleum Reservoir Rocks — Determinations in Laboratory and Field — Oren C. Baptist, U.S. Bureau of Mines, P. O. Box 3395 University Station, Laramie, Wyoming.

The Significance of Moisture Flow and Equilibria in Unsaturated Soil on the Design of Engineering Structures (Founded on Shallow Foundations in Australia) — B. G. Richards, CSIRO, Soil Mechanics Section, Syndel, Victoria, Australia (temporarily at University of California, Berkeley).

Pumping Test Method for Determining Permeability — S. M. Lang, U.S. Geological Survey, Washington, D.C.

Field Measurement of Permeability by the Infiltration Test — W. E. Schmid, Assoc. Professor of Civil Engineering, School of Engineering and Applied Science, Princeton University, Princeton, N.J. 08540.

Inquiries about this symposium should be addressed to A. I. Johnson, Chairman, Symposium on Permeability and Capillarity, Hydrologic Laboratory, U.S. Geological Survey, Federal Center, Denver, Colorado.

MISCELLANEOUS NEWS — INFORMATIONS DIVERSES
VERMISCHTE MITTEILUNGEN

GEODERMA

A new international journal of Soil Science

Discussions with some soil scientists brought one of the scientific editors of Elsevier Publishing Company to the idea, in 1963, that there might be a need for a good international journal in that field. To further investigate this, discussions with other soil scientists were organized, a questionnaire was distributed to all participants of an international meeting and a market investigation was carried out. All supported the earlier conclusion that a new international scientific journal should be created.

Independent of the above, also in the circles of the International Society of Soil Science the idea of a journal arose and a commission was formed at the Bucharest congress to further explore this.

In 1965 the two parties decided to join efforts. The result is the creation of "Geoderma" with the subtitle "An International Journal of Soil Science", which is to appear by the end of 1966 or early in 1967. To promote publication of important papers with little delay this journal will be produced in typed offset. A periodical covering the entire field of soil science appeared to be strongly preferred by scientists to one or more journals that should concentrate on only one or a few specialized fields of pedology.

The following team has already declared itself willing to constitute the Editorial Board of "Geoderma":

J. M. Albareda, Spain; H. J. Altemüller, Germany; G. Aubert, France; E. Besoain M., Chile; R. Brewer, Australia; J. V. J. Carvalho Cardoso, Portugal; F. E. Clark, U.S.A.; R. Dudal, Italy; M. Fieldes, New Zealand; H. Hamdi, Egypt; Y. Ishizuka, Japan; A. Jongerius, The Netherlands; Ch. E. Kellogg, U.S.A.; V. Kovda, U.S.S.R.; J. Lag, Norway; J. Macura, Czechoslovakia; F. Mancini, Italy; S. Nikolic, Yugoslavia; A. N. Puri, India; J. P. Quirk, Australia; D. A. Rennie, Canada; F. Richard, Switzerland; F. Scheffer, Germany; R. W. Simonson, U.S.A.; G. D. Smith, U.S.A.; C. G. Stephens, Australia; R. Tavernier, Belgium; F. A. van Baren, The Netherlands; J. van Garderen, South Africa; L. Wicklander, Sweden; D. H. Yaalon, Israel.

Further members of the board are being invited.

Initially the journal will be published with four issues per volume. The subscription price will be Dfl. 63.—, £ 6.6.0. or U.S. \$ 17.50 per volume.

Registered personal members of the I.S.S.S. may, however, order the journal through the intermediary of the Secretary General of the I.S.S.S. at the reduced price of Dfl. 47.50, £ 4.15.0. or U.S. \$ 13.25.

NEW EDITIONS — NOUVELLES EDITIONS — NEUE AUSGABEN

FIRMAN E. BEAR. *Soils in relation to crop growth*, 297 pp., 27 illustr., 87 tables. Reinhold Publishing Corp., New York, 1965. Price \$ 12.50.

The author who is widely known through 25 years as editor-in-chief of *Soil Science* and who also headed the soil departments of 3 American universities has condensed the results of his close contacts with soil science into the form of a simply written, very readable book. The book surveys its subject matter in 27 chapters in the first of which the process of formation of soils is sketched and their classification discussed. The next chapter brings the mineral content of the soil in relation to weathering and leaching processes and points out the restricted meaning of total contents for plant growth. The first four chapters are completed with a treatise on physical and biological properties of soils and their variation explained in terms of agronomically important properties like aeration and water-holding capacity. The discussion of processes of mineralization of soil organic matter with accompanying nitrate production and fixation is followed by microbiological soil productivity testing procedures based thereon. In three more chapters the requirements of the plant for N and mineral nutrition, water and other environmental conditions are described. These concepts form the other basis for this book and on this the discussion of soil water, air and soil solution is built. More special topics like irrigation and drainage, tillage practices, soil conservation, soil organic matter, manures and composts each receive attention in a separate chapter. Each aspect is viewed in the light of its agronomic implications and from here the book takes on a more and more agronomic character. The resources of the elements N, P, K, Ca, Mg, Na, S and the trace elements are dealt with in individual chapters which contain information on the forms in which the element is present in the soil, availability to the plant, function in living tissues, commercial fertilizers and their interaction with the soil, crop plant responses. Quantitative treatment of the relationships indicates the magnitude of the processes involved. The book closes with reference to some special soil-plant and yield potentiality topics.

Outstanding is the clear presentation of ideas and concise style of writing. The text is semi-technical. While complicated situations are to be avoided, the benefit of deeper insight could have been obtained by use of graphical representation of results. The book reviews largely American work. In a section on compost preparation inclusion of literature from Asia and Europe broadens the discussion. One shortcoming is that hardly any references are given, which eliminates any stimulation for further reading. The book is suitable for soil conservationists, farmers and beginning agriculture students who wish to build an understanding of the many soil factors which affect plant growth from a reliable text.

C. J. DE MOOY

C. EDMUND MARSHALL. *The physical chemistry and mineralogy of soils*. Volume I - Soil Materials, 388 pp., 116 illustr., 34 tables. John Wiley & Sons, 1964.

This excellent book combines for the first time the results of many decades of research in the structure and chemical properties of clay minerals with the extensive literature on electrochemical and electrokinetic properties of clay-water systems. It is written in highly technical style. A certain knowledge of thermodynamic properties and physical chemistry in general is a prerequisite for the reader. After an introduction wherein amongst other things, exchange reactions are discussed on the basis of free energy change and formal relationships are derived for Donnan equilibria, the direction is directed to the structural classification of silicates and to what is known about the weathering of important silicate minerals in the soil. The presentation is continued in the next chapter dealing in turn with the structure and properties of all prevalent groups of inorganic soil colloids as well as interstratified clay minerals. Allophanes and oxides of aluminium and iron are briefly described in form and properties. Research on soil organic matter is also reviewed. This is presumably the weakest chapter in the book for the reason that new concepts on the structure of soil organic matter components have come from the field of biochemistry rather than the physicochemical approach.

Via a treatise of molecular adsorption containing the application of BET theory, thermobalance, DTA methods and X-ray diffraction to adsorption and desorption phenomena of inert and polar molecules one enters the other section of the book which gives a quantitative treatment of exchangeable cations and the energies by which they are held. A chapter on ionic exchange reactions reviews various types of

adsorption equations including statistical models and attempts towards thermodynamic formulation. Corrections to the ionic double-layer theory and hysteresis effects are mentioned. The fixation of K and NH_4 in 2:1 type clay mineral lattices, exchange and fixation of A_1 , adsorption and exchange of anions (particularly phosphates) are dealt with in a subsequent chapter. Another two chapters are devoted to electrochemical and electrokinetic properties of clay-water systems. The results from potentiometric and conductometric experiments are related to dissociation mechanisms of surface structures and the properties of ionic double layers. The latter are further analysed in the electrokinetic section and is followed by a consideration of coagulation, viscosity, thixotropy and swelling of clay-water systems.

The author is an internationally-known soil scientist and has been a professor of soils at the University of Missouri for almost 25 years. His book reviews an abundant literature, sketching current concepts in the light of the historic line of events and with some strong indication for future work. It is written as a summary meant for teachers in soils, colloid chemists and other specialized researchers rather than as a comprehensive text for graduate students. Although it covers all subject matter presented in advanced soil chemistry courses given in U.S.A. colleges to-day, the detailed picture needs to be obtained from the references supplied. The book is very well documented and contains over 500 selected references.

C. J. DE MOOY

VINCENT SAUCHELLI. Phosphates in agriculture, 277 pp., 76 illustr., 78 tables. Reinhold Publishing Corp., New York, 1965. Price \$ 12.50.

In trying to review all relevant information on phosphate rock and fertilizers and at the same time to explain the role of phosphorus fertilizers in agricultural production the author has written a book which consists essentially of two parts. Central is a concise treatise of the nature and characteristics of phosphate materials which is preceded by the geology, distribution and mining of the raw material, the chemical properties of phosphorus, the manufacturing of phosphate fertilizers and followed by a detailed description of chemical methods for analysis of phosphate fertilizers and a discussion of the world trade illustrated with tabulated information on trends in world production, consumption and exports. This part of the book is of a semi-technical nature and contains a storehouse of information. The second aim of this book, that of creating an understanding of the role of phosphorus in agriculture, made it necessary to enter into the complicated interactions between phosphorus and soil, the various inorganic and organic forms of soil phosphorus and the equilibria governing their availability to the plant. Next follows the role of phosphorus in the plant, mechanism of phosphorus uptake, root systems and root exploration. There are separate chapters examining the question of phosphorus fixation by the soil and residual value of fertilization, the effect of fertilizer granulation and of soil management practices like liming, manuring, placement of fertilizers and frequency of application on crop nutrition.

Where necessary the author goes into considerable detail, like in the analysis of the modifying effect of granulation on phosphorus availability. These sections form an introduction to soil fertility. Since the author's interpretation of the subject is clear and correct this presentation is valuable. The agronomic section is rounded off with an account of the role of phosphorus in animal nutrition. The book is well-indexed and contains a good bibliography for further reading. Information from all over the world is incorporated. Full use is made of graphical representation of results and tabulated data. The two main aspects of the book are rather intertwined and it seems that the chapters dealing with technological and industrial topics could have been separated more stringently from those on phosphorus-soil-plant relationships.

The author is internationally known in the fertilizer industry. He has held high executive positions in the area of fertilizer production and technology for almost 40 years and has edited several monographs on fertilizers sponsored by the American Chemical Society. The book aims to assist the non-technical man, the fertilizer dealer, the agricultural extension worker and the farmer. Certain sections are indeed written at the layman level. This holds for a chapter with questions and answers which is largely a repetition of earlier discussions. Other sections, however, like those on phosphorus-soil-plant relations are of higher standing. The non-technical person may still benefit most, but the general outlook is of definite value to vocational agricultural teachers and undergraduate students, while some of the information may even be of service to their professors.

C. J. DE MOOY

DEFICÊNCIAS MINERAIS EM CULTURAS por **Dr A. Primavesi and Dra Anna Maria Primavesi**, with summary in English and German, pp. 246, 14 coloured plates, figures, litt. Livraria do Globo S.A., Porto Alegre, Brasil.

In this second volume of a trilogy of which mention has been made in Bulletin no. 25, 1964, page 41, signs of mineral deficiencies in tropical and sub-tropical crops are expertly treated. The fact that world-famous expert on hunger signs, the late Professor Wallace has written an appreciating foreword, as also did Professor Bussler from Berlin and Professor Sprague from Pennsylvania, proves the merits of this volume. It is based on the recognition in the field of the various deficiency symptoms which are caused by the shortage of 12 major and minor elements. As an early diagnosis may mean the difference between total failure or at least a reasonable success, "the book should prove a valuable aid in the efforts that are being made to increase the yield and quality of tropical and subtropical crops" as Professor Wallace writes in his foreword.

H. A. KELLER AND P. BAUDOIN KALFF. Contribution aux études de l'utilisation optimum des eaux du Nil (Contribution to the studies on optimum management of the Nile discharge). Trav. Publ. Entreprises, 17, rue Paul-Lelong, Paris, No. 53, p. 1—38 (1965), tables, graphs, figures, photos, maps, 99 ref. English and German summaries.

A critical review of the Nile Agreement of 1959 and of some assumptions of the Aswan High Dam scheme is followed by a comparison between this scheme and the Gabgaba project. The latter project is based on an off-river, over-year storage. By diverting the desilted Nile floods into the Gabgaba basin, while passing the bulk of the Nile silt down the existing river bed, it should be possible to preserve the river's beneficial silt regime while using the Nile's potential to a much higher degree.

G. MÜLLER. Bodenbiologie. 889 Seiten, 107 Abb., 117 Tab., VEB Gustav Fischer Verlag Jena, 1965. DM 89.90.

Das vorliegende umfangreiche Werk kann als ein Standardwerk der Bodenbiologie angesehen werden, das eine Ergänzung zur allgemeinen Bodenkunde darstellt und im deutschen Schrifttum eine grosse Lücke schliesst. Nach einem geschichtlichen Überblick über die Entwicklung der bodenbiologischen Forschung wird das gesamte Fachgebiet der Bodenbiologie in fünf grossen Kapiteln behandelt. Dabei wird die ganze Fülle der einschlägigen Literatur berücksichtigt.

Zunächst wird in einem grösseren Kapitel die Morphologie, Systematik, Physiologie und Vorkommen der Bodenflora und -fauna beschrieben, ergänzt durch in-struktive Abbildungen. Bei der Darstellung der bodenbiologischen Methoden im nächsten Kapitel wird auf eine Aufzählung bekannter Arbeitsmethoden verzichtet, es werden vielmehr vom Verfasser erprobte Verfahren zur Erfassung der Bodenflora und -fauna wiedergegeben. Wichtig scheinen die Hinweise auf die Fehlerquellen bei den üblichen Erkennungsverfahren und die Abschnitte über die fehlerkritische Auswertung und varianzanalytische Deutung der Ergebnisse. Darauf folgt eine Besprechung des Einflusses aller physikalischer und chemischer Standortbedingungen auf die Zahl der Bodenorganismen. Das umfangreichste Kapitel ist den Leistungen der Bodenorganismen gewidmet. Bei den Kreisläufen der Stoffe werden immer auch die Standortfaktoren berücksichtigt, ebenso bei der Dynamik des Humusaufbau und -abbau. Besondere Beachtung verdient der Abschnitt über die biologische Charakterisierung der wichtigsten Bodentypen Mitteleuropas, eine in seiner Art neue Aufstellung der Bedeutung der Bodenorganismen für die Entwicklung der verschiedenen Bodentypen. Im abschliessenden Kapitel über die Beeinflussung des Bodenlebens durch die Kulturmassnahmen werden neben den Massnahmen der Bodenbearbeitung und Düngung auch derzeit besonders interessierende Themen wie die landwirtschaftliche Abwasserberegnung, die Rekultivierung von Kippenböden, der Bodenimpfung und Fragen des Pflanzenbaus, der Bodemmüdigkeit und des Einflusses von Pflanzenschutzmitteln behandelt.

Das vorliegende Buch wird für alle diejenigen, die auf dem Gebiet der Bodenbiologie in Forschung und Lehre tätig sind, ebenso wie für die Studenten der Naturwissenschaften, Land- und Forstwirtschaft in Zukunft unentbehrlich sein.

BERND ANDREAE. Die Bodenfruchtbarkeit in den Tropen, 123 pp., illustr., tables, litt. ref. Paul Parey Verlag, Hamburg-Berlin, 1965. Price DM 28.—.

In this book on the fertility of tropical soils, emphasis is placed on the reality that the tropics are, generally speaking, inhabited by people whose agricultural practices have not yet reached the level of western enterprises, whose social,

technical and economic development needs improvement, whereas they often live in areas which are by no means easily accessible. Agricultural practices and maintenance of soil fertility are the issue in countries where intensified shifting cultivation up till now seemed to offer the only solution to cope with the ever increasing pressure on the land. The author handles the problem by discussing three climatical zones, the humid, sub-humid and semi-arid zone, giving amongst others the most important types of crop grown in these regions. In chapter IV the usefulness of specific soil fertility conservation measures for emerging countries is discussed with emphasis on the numerous limitations, both natural and human, which hamper development. Type of autochthonous enterprise, animal husbandry and irrigation are treated in the chapters V, VI and VII. Chapter VIII contains a summary in the German and English languages.

All in all an interesting volume that introduces the reader in the implications of adapted modern agriculture. It is an enumeration of data and facts which allows of an evaluation of the intricate problems involved and as such a rather opportune publication in a time that technical assistance by people trained in a technically, highly developed society is developing at an ever increasing pace.

S. K. DE. Practical Agricultural Chemistry, 347 pp., tables, graphs, litt. Narayan Publishing House Allahabad-2, 629 University Road. Price Rs. 25.00; Sh. 45; \$ 8.00.

As the author stresses in his preface, this book is in the first place meant for graduate students in agriculture and to a certain extent may prove to be useful to the M. Sc. agriculture student. We may add, as a second purpose, that it is written with a view to organize research and extension work in the agricultural field in India.

The most interesting feature of the book is that it contains subjects that normally are treated in separate textbooks, as shows he following summary of contents:

I: Quantitative inorganic analysis; II: Qualitative analysis of organic substances; III: Analysis of soil; IV: Analysis of fertilizers and manures; V: Analysis of plants and stock-feeds; VI: Analysis of fats and oils; VII: Analysis of milk and milk-products; VIII: Analysis of water; IX: Analysis of insecticides and fungicides; X: Analysis of amino acids; XI: Errors in analytical measurements.

In our opinion the order of discussion of the subjects could be more logical. For example, the chapter on water should follow after the discussion on soil and the qualitative analysis of organic substances would better precede the chapter on fats and oils. Also within one chapter, as for instance "soil", the order of discussion of the subjects is rather haphazard. It starts (correctly) with physical properties as Volume of weight (I), Specific gravity (II), Pore Space (III), Sticky Point (IV). One should expect that the texture analysis will follow, but this is done as sub-number (VIII), preceded by soil moisture, pH and conductivity. In the section on Soilmoisture we missed a discussion on pF. The methods described for inorganic analyses are the conventional methods based on gravimetry and titrimetry which are however mostly very time consuming. Colorimetry is mentioned for Mn; flame-photometry is not discussed. Considering the number of misprints in the text and some of the tables, the volume has apparently been printed in too great a hurry. This is a pity as the textbook merits to be studied by prospective agricultural chemists.

A. MULLER

C. E. MILLER, L. M. TURK AND H. D. FOTH. Fundamentals of Soil Science, 4th ed., pp. 491, graphs, tables, col.plates, litt. John Wiley & Sons Inc., New York/London, 1965. Price 75/-.

This is an enlarged edition of a well known textbook on the fundamentals of soil science. In view of the increased interest of students outside the U.S.A., the text has been better adapted. Consisting of 17 chapters which cover the various aspects of soil science in an easily digestible way, the student finds information on the soil as a natural body whose properties vary laterally and vertically. One could contest the logic of placing the new chapters on soil genetics and great soil groups (10 and 11) between agriculturally orientated chapters on soil reactions (6), lime (7), organic matter (9) and nutrient requirement (12), fertilizers (13), etc. The new U.S. system of soil classification is perhaps too briefly mentioned. That all latosols belong to the oxisol order may be disputed. This, of course, does not detract from the fact that the reader finds well-presented data on a wide field of interest to students in soil science as well as to agriculturists. As such it is a useful addition to other textbooks on this subject.

OBITUARY — NECROLOGIE — NEKROLOGIE

Edward John Russell

(1872—1965)

Honorary Member of
the International Society of Soil Science

Sir John Russell, O.B.E., F.R.S., the eminent soil scientist, died on 12th July 1965, in his 93rd year.

Edward John Russell, born the son of a country clergyman, left school at the age of 14. With determination he worked his way to the University College of Wales and studied further at Manchester University, where he held his first appointment as a Lecturer in Chemistry. After six years as Head of the Chemistry Department at Wye Agricultural College, he moved to the Rothamsted Experimental Station in 1907 and was appointed Director in 1912. He remained Director at Rothamsted until his retirement in 1943. During this period he not only made many contributions to research but expanded the activities of the Station and built up its reputation both in the United Kingdom and abroad. He was elected a Fellow of the Royal Society in 1917 and his services to British agriculture were recognised by a knighthood in 1922.

His classic book, "Soil Conditions and Plant Growth", became a standard text on its first publication in 1912. It remains so to-day, re-written and revised by his son, Dr. E. W. Russell. Sir John continued to write in his retirement and published "World Population and Food Supplies", a volume of autobiography, and, for the general reader, "The Living Soil". More recently he had been engaged on a history of the agricultural science in Great Britain, which is to be published in the course of this year.

During his time at Rothamsted his services were much in demand overseas and his first-hand knowledge of world agriculture was unique. He continued to travel in the later years and took an active part in the affairs of the International Potash Institute, until his doctor forbade overseas travel. He was a frequent speaker at our congresses. We are proud that this great man served on the Scientific Board of this Institute from its foundation in 1954 and that in 1962 he accepted our invitation to become the first Honorary Life Member of the Board.



International Potash Institut, Bern

GUY D. SMITH

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