



bulletin

of the international society of soil science

bulletin

de l'association internationale de la science du sol

mitteilungsblatt

der internationalen bodenkundlichen gesellschaft

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

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**Commissions/Commissions/Kommissionen - Chairmen/Présidents/Vorsitzenden**

**I. Soil physics/Physique du sol/Bodenphysik**

Dr. D. R. Nielsen, Dept. of Water Science and Engin. Univ. of California, Davis, CA. 95616, USA

**II. Soil chemistry/Chimie du sol/Bodenchemie**

Dr. M. Schnitzer, Chemistry and Biology Research Institute, Agriculture Canada, C.E.F., Ottawa, Ontario K1A 0C6, Canada

**III. Soil biology/Biologie du sol/Bodenbiologie**

Prof. Dr. E. A. Paul, Dept. of Soil Science, Univ. of Saskatchewan, Saskatoon, Sask. S7N 0W0, Canada

**IV. Soil fertility and plant nutrition/Fertilité du sol et nutrition des plantes/Bodenfruchtbarkeit und Pflanzenernährung**

Dr. C. Hera, Academia de Stiinte Agric. si Silvice, Bd Marasti 61 Bucuresti, Romania

**V. Soil genesis, classification and cartography/Genèse du sol, classification et cartographie/Bodengenetik, Klassifikation und Kartographie**

Prof. Dr. E. Schlichting, Institut für Bodenkunde und Standortslehre, Universität Hohenheim, PF 106, D 7000, Stuttgart-70, BRD

**VI. Soil technology/Technologie du sol/Bodentechnologie**

Prof. Dr. C. Sys, Geologisch Instituut, RUG, Krijgslaan 271, 9000 Gent, Belgium

**VII. Soil mineralogy/Minéralogie du sol/Bodenmineralogie**

Prof. Dr. U. Schwertmann, Institut für Bodenkunde, 8050 Freising-Weihenstephan, BRD

**International Society of Soil Science (ISSS)**  
**Association Internationale de la Science du Sol (AISS)**  
**Internationale Bodenkundliche Gesellschaft (IBG)**

- REGISTRATION FOR MEMBERSHIP/DEMANDE D’AFFILIATION/AUFNAHMEAN-TRAG
- CHANGE OR CORRECTION OF ADDRESS/CHANGEMENT OU CORRECTION D’ADRESSE/ANSCHRIFTENÄNDERUNG
- STATEMENT ON SPECIAL INTERESTS/DÉCLARATION D’INTERÊTS SPECIAUX/ANZEIGUNG VON SPEZIALINTERESSEN

- Please return this form, completed at both sides, to the Treasurer ISSS: Dr. D. Gabriels, Coupure Links 533, B-9000, Ghent, Belgium.
- *Veillez bien renvoyer ce formulaire, complété de deux côtés, au Trésorier AISS: Dr. D. Gabriels, Coupure Links 533, B-9000, Gand, Belgique.*
- Bitte senden Sie diesen Formular, ausgefüllt an beiden Seiten, zum Schatzmeister IBG: Dr. D. Gabriels, Coupure Links 533, B-9000, Gent, Belgien.

\* Name

\* Nom

\* Name

First name(s) or initials

Prénom(s) ou initiales

Vorname(n) oder Initialen

Title and/or function

Titre et/ou fonction

Titel und/oder Tätigkeit

Address (Institution & Dept., Street and no., P.O. Box, Town & Zipcode, Country)

Adresse (Institution et Département, Rue et no., Boîte Postale, Ville et Code Postale, Pays)

Anschrift (Institut & Abteilung, Strasse & No., Postfach, Stadt & Postleitzahl, Land)

Previous country of residence

Ancien pays de domicile

Der voriger Landesort

\* For composite names, please indicate first the part of the name to be used for listing it in alphabetical order.

\* *Pour les noms composés, prière de marquer en premier lieu l'élément du nom à utiliser dans une liste alphabétique.*

\* Bei zusammengesetzte Namen wird gebeten, zuerst den Teil des Namens anzugeben, der in einer alphabetische Folge erscheinen soll.



*Note for present members*

It will be endeavoured to have the specific professional interests systematically recorded in the Society's semi-automated membership administration at Ghent, for selective forwarding of information on forthcoming activities of Commissions and Working Groups. Please tick off your interests and send this form, with your address indicated on the reverse side, to the Treasurer ISSS.

*Note pour les membres actuels*

On essayera d'enregistrer systématiquement les intérêts professionnels spécifiques dans l'administration semi-automatisée des membres à Gand, pour envoyer de l'information sélectionnée concernant les activités futures des Commissions et des Groupes de Travaux. Veuillez noter vos intérêts et envoyer cette formule avec votre adresse indiquée à l'envers, au Trésorier de l'AISS.

*Bemerkung für gegenwärtigen Mitglieder*

Es werde versucht worden die professionellen Spezialinteressen systematisch einzutragen in die semi-automatisierte Mitgliederadministration der Gesellschaft in Gent, zur selektierten Zuschickung der Information über zukünftlicher Aktivitäten betreffs Kommissionen und Arbeitsgruppen. Bitte notieren Sie Ihre Interesse und senden Sie dieses Formular, mit Ihrer Adresse, angezeigt an die Hinterzeite, am Schatzmeister IBG.

**Specially interested in the activities of/particulièrement intéressé aux activités de/besonders am folgenden Bereichen interessiert:**

*Commission(s) / Commission(s) / Kommission(en)*

- I Soil Physics/Physique du Sol/Bodenphysik
- II Soil Chemistry/Chimie du Sol/Bodenchemie
- III Soil Biology/Biologie du Sol/Bodenbiologie
- IV Soil Fertility and Plant Nutrition/Fertilité du Sol et Nutrition des Plantes/ Bodenfruchtbarkeit und Pflanzenernährung
- V Soil Genesis, Classification and Cartography/Genèse du Sol, Classification et Cartographie/ Bodengenetik, Klassifikation und Kartographie
- VI Soil Technology/Technologie du Sol/Bodentechnologie
- VII Soil Mineralogy/Minéralogie du Sol/Bodenmineralogie

*Subcommissions/Sous Commissions/Subkommissionen*

- A Salt Affected Soils/Sols Salins/Salzböden
- B Micromorphology/Micromorphologie/Mikromorphologie

*Working Groups/Groupes de Travail/Arbeitsgruppen*

- SC Soil Conditioning/Stabilisation de la Structure du Sol/Bodenstrukturverbesserung (Com. I)
- NO Nomenclature Hydromorphic Soils/Nomenclature des Sols Hydromorphes/Nomenklatur Hydromorphen Böden (Com. V)
- DP Soil Information Systems, Informatique en Pédologie/ Informationssysteme in der Bodenk. (Com. V)
- RS Remote Sensing for Soil Surveys/Pédologie et Télédétection/Fernerkundung für Bodenkartographie (Com. VI)
- CS Cryogenic Soils/Sols cryogènes/kryogene Böden (Com. V)
- FS Forest Soils/Sols forestiers/Waldböden (Com. V)
- PP Paleopedology/Paléopédologie/Paleopedologie (with/avec/mit INQUA)
- FT Soil Fertility/Fertilité des Sols/Bodenfruchtbarkeit (Com. IV)
- DS Desertification/Désertification/Verwüstung (Com. V)
- LE Land Evaluation/Evaluation des Terres/Landbewertung (Com. VI)
- HS Humic Substances/Matériaux humiques/Humusbestandteile (Com. II)
- CO Soil Colloid Surfaces/Surfaces des Colloïdes de Sol/Bodencolloïdale Oberfläche (Com. VII)

**Preferred Language/Langue préférée/gewünschte Sprache**

- English       Français       Deutsch

**Payment/Cotisation/Jahresbeitrag**

Payment of the yearly due of US \$5 (or equivalent) will be made:

*La cotisation annuelle de 5 dollars E.U. (ou leur équivalent) sera versée:*

Der Jahresbeitrag von US \$5 (oder Gegenwert) wird bezahlt:

- through the national society of/par l'intermédiaire de l'association nationale de/durch die Nationalgesellschaft von (country/pays/Land)
- by cheque/par chèque/durch Scheck
- into the account/au compte/auf das Konto: D. Gabriels, Treasurer ISSS, 390.0440957.50, Bank Brussels Lambert, Martelaarslaan, B 9000 Gent, Belgium
- as Unesco coupons/sous forme de bons de l'Unesco/mit Unesco-Kupons



## COLLOQUE INTERNATIONAL 'HUMUS ET AZOTE'

*du 7 au 11 juillet 1981 à Reims, France*

sous le patronnage de:

- l'Association Française de Science du Sol (AFSS)
  - l'Institut National de la Recherche Agronomique (INRA)
- avec l'adhésion de la Commission II de l'Association Internationale de Science du Sol.

### **Programme:**

- Thème I: Réserves organiques des sols et leur évolution lors des processus d'humification.
- Thème II: Structure des composés humiques et minéralisation.
- Thème III: Facteurs physico-chimiques intervenant sur les transferts d'azote.
- Thème IV: Bilan de l'azote et prévisions de fumure.

Au point de vue de la forme de ce Congrès, il est prévu que toutes les communications se rapportant à l'un ou l'autre des 4 thèmes seront examinées par un Comité scientifique; plusieurs rapporteurs seront alors désignés pour une présentation de synthèse, ceci n'excluant pas une présentation plus personnalisée sous forme de posters.

En outre, des tables rondes seront organisées sur chacun des 4 thèmes entre les rapporteurs, les présentateurs et les différents chercheurs intéressés, afin que des discussions plus spécifiques, donc plus fructueuses, puissent avoir lieu.

### **Renseignement administratifs:**

Une pré-inscription au colloque doit avoir lieu au plus tard pour le *1er septembre 1980*, accompagnée d'un résumé d'environ 10 lignes en français et en anglais.

Les organisateurs recontacteront les chercheurs intéressés, pour le *1er décembre 1980*, l'inscription et les mémoires définitifs devront être envoyés pour le *1er janvier 1981*.

Les frais d'inscription, de compte-rendu, ainsi que de l'excursion sur le terrain s'élèveront à 600 francs (six cents francs).

L'hébergement et la restauration pourront être prévus dans le cadre de l'Université de Reims pour une somme modique d'environ 70 francs/jour. D'autre part, pour ceux qui préféreraient l'hôtel, des réservations pourront être faites dans cette ville touristique.

Une traduction simultanée - français-anglais - sera assurée pour les 5 séances plénières.

## INTERNATIONAL COLLOQUIUM ON 'HUMUS AND NITROGEN'

*from 7 to 11 July 1981 in Reims, France*

under the sponsorship of:

- the French Soil Science Society (AFSS)
  - the Institut National de la Recherche Agronomique (INRA)
- with the adhesion of Commission II of the International Society of Soil Science.

### **Programme:**

- Theme I: Organic matter reserves in the soil and their evolution during the humification processes.
- Theme II: Structure of humus compounds and mineralisation.
- Theme III: Physico-chemical factors influencing the nitrogen cycle.
- Theme IV: Nitrogen balance and fertilizing assessment.

As to the form of the conference, it is foreseen that all papers related to one of the above four themes will be examined by a Scientific Committee. Several reviewers will then be designated for the presentation of a synthesis, but this does not exclude a personal presentation of individual papers at poster sessions.

There will be moreover round-table discussions on each of the four themes between the reviewers, the authors of individual papers and other interested scientists. This will hopefully result in more specific and thereby more useful discussions.

#### **Administrative details**

A provisional registration for the colloquium should take place at the latest on the *1st September 1980*, accompanied by a summary of about 10 lines in french and english.

The organisers will contact scientists that have shown their interest by the *1st December 1980*. Definite registration and the full text of papers should be forwarded before *1st January 1981*.

The costs of registration, of the proceedings and of the field excursion will be 600 french francs (six hundred french francs).

Board and lodging can be arranged at the Campus of the University of Reims for an average price of 70 french francs per day. For those participants who would prefer hotel accommodation, reservations can be made in this tourist town.

A simultaneous translation english-french will be assured for the five plenary sessions.

#### **Adresse/Address:**

Institut National de la Recherche Agronomique – Monsieur Dutil, Directeur de recherches, Station de Sciences du Sol, route de Montmirail – 5100 Chalons s/Marne, France.

### **INTERNATIONAL COLLOQUIUM ON 'EARTHWORM ECOLOGY'**

*September 1981, Merlewood, England*

marking the centenary of Darwin's book 'The Formation of Vegetable Mould through the Action of Earthworms'.

under the sponsorship of the Linnaean Society, the British Soil Science Society, and Unesco.

with the adhesion of Commission III of the International Society of Soil Science.

#### **Programme:**

The role of earthworms...

- in forest soils
- in minimum cultivation agriculture
- in irrigation agriculture
- in rehabilitation of degraded soils
- in utilization of organic wastes
- in radio nucleide dispersal.

There are already over 120 provisional registrations, from 30 countries.

**Address:** Dr. J. E. Satchell, the Institute of Terrestrial Ecology, Merlewood Research Station, Grange-over-Sands, Cumbria LA11 6JU, England.

# INTERNATIONALES SYMPOSIUM ÜBER 'BODENPROBLEME IN BALLUNGSGBIETEN'

vom 7. bis 9. September 1981 in West-Berlin, BRD

Veranstaltung der Deutschen Bodenkundlichen Gesellschaft (DBG) in Kooperation mit der Kommission V der Internationalen Bodenkundlichen Gesellschaft.

Die Deutsche Bodenkundliche Gesellschaft veranstaltet im Rahmen ihrer Jahrestagung 1981 in Berlin im September 1981 ein Symposium über 'Bodenprobleme in Ballungsgebieten' und lädt hierzu herzlich auch IBG-Mitglieder insbesondere der Kommission V ein. In Vorträgen und auf Exkursionen sollen Böden von innerstädtischen Freiflächen (z.B. Gärten, Parkanlagen, Sportplätze, Friedhöfe), Industrie- und Verkehrsflächen sowie von städtischen Entsorgungseinrichtungen (z.B. Depo- nien, Abwasser-Rieselfelder) mit ihren Problemen als Pflanzenstandorte und Grundwasserfilter dargestellt werden.

## Programm:

7.9., 15.00–18.00, 8. und 9.9. jeweils 8.00–12.30: Vorträge zum Tagungsthema

7.9., 8.00–12.30: Exkursion Aa (Böden von innerstädtischen Grünanlagen und neben einer Mülldeponie)

8.9., 14.00–18.30: Exkursion Ab (Böden am Strassenrand und mit Abwasserverrieselung).

Die Tagungsgebühr (einschliesslich des gedruckten Symposiums-Berichtes) beträgt DM 60.– und die Gebühr für jede Exkursion DM 12.– (einschliesslich eines Exkursionsführers in Deutsch oder Englisch).

Ferner sind vorgesehen: 9.9., 17.00–22.00 Uhr eine Fahrt auf Berliner Gewässern mit Imbiss (DM 20.–) und 8. und 9.9. ein Besichtigungsprogramm für Begleitpersonen. Entsprechende Unterlagen werden nach Anmeldung zugesandt.

Interessenten können am weiteren Tagungs- und Exkursionsprogramm der DBG vom 6.–12.9.1981 teilnehmen.

**Sprachen:** deutsch, englisch, französisch.

## Verwaltungseinzelheiten:

- Feste Anmeldung der Teilnahme: nicht später als 1.4.1981.
- Feste Anmeldung eines Vortrages: nicht später als 1.1.1981. Zu den Vorträgen (15 Min. + 5 Min. Diskussion) soll eine Kurzfassung in druckfähiger Form (max. 1 Seite, 2zeilig mit 2.5 cm Randabständen) mit Fragestellung, Methodik und wichtigsten Ergebnissen eingereicht werden.
- Entscheidung über die Annahme eines Vortrages: nicht später als 1.3.1981.
- Einreichen des Vortragsmanuskriptes: nicht später als 15.10.1981. Maximal 7 Seiten in druckfähiger Form (s.o.).
- Zahlung der Gebühren (Tagung DM 60.–, Exkursionen je DM 12.–, Empfang DM 20.–): nicht später als 1.4.1981.

**Adressen:** sehe folgende Seite.

## **INTERNATIONAL SYMPOSIUM ON 'SOIL PROBLEMS IN URBAN AREAS'**

*from 7 to 9 September 1981 in West-Berlin, GFR*

under the sponsorship of the German Society of Soil Science (DBG), with the adhesion of Commission V of the International Society of Soil Science

On the occasion of its Annual Meeting to be held in September in Berlin, the German Society of Soil Science (DBG) arranges for a Symposium on 'Soil Problems in Urban Areas' and kindly invites also ISSS members especially from Commission V. Lectures and excursions will deal with soils of intra-urban green spaces, industrial and traffic areas, and communal waste disposal sites with respect to their suitability for vegetation or as filters for the groundwater.

### **Programme:**

7.9, 15.00–18.00; 8 and 9.9, 8.00–12.30: Lectures

7.9, 8.00–12.30: Excursion Aa (soils of urban parks and near waste fills)

8.9, 14.00–18.30: Excursion Ab (soils at road sides and with sewage irrigation).

The fees for registration (including the printed Symposium Reports) will be DM 60.– and for each excursion DM 12.– (including an Excursion Guide in English and German).

Additional program: 9.9, 17 to 21 hrs. boat trip on lakes and channels of Berlin with snacks (20.– DM), 8 and 9.9 guided sightseeing for accompanying persons. Programs will be forwarded upon receipt of inscription.

Those interested may participate in the other lectures and excursions of the DGB from 6 to 12.9.1981.

**Languages:** English, French, German.

### **Administrative details:**

- Letter of inscription: not later than 1.4.1981 (address see below).
- Submission of an abstract: not later than 1.1.1981 (address see below). Lectures (15 min. + 5 min. discussion) shall be announced with an abstract in printable form (of at most 1 page 21.1 × 29.7 cm typed double-space with 2.5 cm margins), containing the problem in question, methods and most important results.
- Decision about acceptance of a paper: not later than 1.4.81.
- Submission of the final manuscript: not later than 15.10.81. Manuscripts in a form of at most 7 pages (see above).
- Payment of fees (inscription DM 60.–; excursions each DM 12.–): not later than 1.4.81.

### **Addresses/Adressen/Adresses:**

Please send letters of inscription and abstracts to/Anmeldung und Kurzfassungen an/Fiche de participation et résumé à renvoyer à:

Prof. Dr. Ernst Schlichting  
PF 106 (05100)  
D-7000 Stuttgart 70, BRD.

Please pay symposium fees to the account/Überweisung der Tagungs- und Exkursionsgebühren auf Konto/Versement des frais de séance et des excursions à l'ordre de:

Deutsche Bodenkundliche Gesellschaft (DBG),  
Commerzbank Göttingen Nr. 6 256390/03, BLZ 260 400 30, BRD.

## SYMPOSION INTERNATIONAL SUR 'PROBLEMES PEDOLOGIQUES EN BANLIEUES URBAINES'

*du 7 au 9 septembre 1981 à Berlin-ouest, RFA*

organisation à la charge de l'Association Allemande pour l'Etude du Sol (DBG), avec l'adhésion de la Commission V de l'Association Internationale de la Science du Sol.

L'Association Allemande pour l'Etude du Sol (DBG) organise, en septembre 1981, au cours de sa session annuelle 1981 à Berlin (Ouest), une séance au sujet de 'Problèmes pédologiques en banlieues urbaines'. Elle y invite cordialement les membres de l'AISS, spécialement ceux de la commission V. Il s'agira de démontrer, lors des exposés et des excursions, les sols et les problèmes pédologiques des points de vue habitat de plantes et filtres d'eaux souterraines tant des places urbaines restées libres (donc jardins, parcs, terrains de sports, cimetières), des aires industrielles et de trafic, que des aires municipales de vidange (par exemple dépôts d'ordures, champs irrigués avec eaux d'égouts).

### **Programme:**

7 septembre, de 15 à 18 h., 8 et 9 septembre de 8 h. à 12 h. 30: Séances de travail à propos des thèmes choisis

7 septembre, de 8 h. à 12.30: Excursion Aa: Sols de parcs municipaux et sols à côté d'un dépôt d'ordures

8 septembre, de 14 h. à 18. h. 30: Excursion Ab: Sols au bord des routes et sols irrigués avec des eaux d'égouts.

Les frais de participation sont fixés à 60.- DM pour l'ensemble des sessions (y compris les comptes rendus du colloque) et 12.- DM pour chacune des excursions (guide d'excursions en langue allemande ou anglaise inclu).

Programme supplémentaire prévu: promenade en bateau sur les eaux berlinoises, avec casse-croûte (frais: 20.- DM), le 9 septembre de 17 à 21 h., ainsi que, les 8 et 9 septembre, des tournées de visite pour les personnes accompagnantes. Les programmes complémentaires seront envoyés après l'inscription.

Les personnes désirant participer à la session complète de la DBG et aux excursions, du 6 au 12 septembre 1981, y sont cordialement invitées.

**Langues:** Allemand, Anglais, Français.

### **Détails administratives:**

- Inscription pour participantes: jusqu'au 1-4-1981 au plus tard.
- Présentation d'un exposé (15 min. + 5 min. pour les questions): inscription jusqu'au 1-1-1981 comportant un résumé rédigé en forme imprimable (maximum 1 page, avec double inter-ligne et avec des marges de 2.5 cm) et comprenant l'introduction à la question, la méthodologie et les principaux résultats.
- Décision en vue de l'acceptation des exposés: 1-3-1981 au plus tard.
- Envoi du manuscrit de l'exposé: au plus tard le 15-10-1981. Il comportera au maximum 7 pages, rédigées de façon reproductible (voir plus haut).
- Versement des droits d'inscription (séance 60.- DM; excursions 12.- DM chacune): au plus tard le 1-4-1981.

**Adresses:** voir le page précédent.

## Commissions IV, V, VI and VII

### INTERNATIONAL CONFERENCE ON "SOILS WITH VARIABLE CHARGE"

*11-18 February 1981, Massey University, Palmerston-North, New Zealand*

The second circular on the Conference, with full details on the programme, has been sent around to all members of ISSS in the beginning of 1980. Therefore only some highlights are mentioned here.

#### Conference programme:

The conference programme includes plenary sessions, poster sessions and discussion groups. Papers presented at the plenary sessions will cover topics of general interest to soil scientists. There will be no concurrent sessions. The limited number of oral papers is supplemented by two poster sessions. The Programme Committee wishes to stress that for this conference they consider Poster Papers to be the most important and most satisfactory way of presenting information. Besides providing an opportunity for discussion, Poster Papers permit more up-to-date information to be presented informally. This point will be especially appreciated by people whose principal language is not English. Discussion Group sessions will provide further opportunity for in-depth discussion on topics related to the poster displays.

The first day is devoted to a review of current knowledge on soils with variable charge comprising in the main tropical, podzolic and volcanic ash soils.

*The Programme Committee wishes to stress that the conference topic is 'Soils With Variable Charge' not 'Variable Charge In Soils'. The cause of the variable-charge component, and the behaviour of this component will be discussed at the conference. However, it will not be the sole topic of discussion. Morphology, mineralogy, chemistry, biology, physics/mechanics and genesis/classification of volcanic ash soils, podzols and tropical soils will also be the subjects of oral and poster paper presentations.*

A book (on the morphology, mineralogy, chemistry, biology, physics/mechanics and genesis/classification of soils with variable charge) is to be produced prior to the conference and supplied on arrival to participants. These topics will form the basis of six Review Sessions, each of which will be led by an invited speaker. The six speakers and their respective fields are:

R. W. Arnold (morphology); K. Norrish (mineralogy); G. Uehara (chemistry); R. Swaby (biology); R. D. Northey (physics/mechanics); and M. Leamy (genesis/classification).

The remainder of the conference has been divided into three sessions:

- (i) New information on the characteristics of soils with variable charge.
- (ii) New developments in classification, management and transfer of information for soils with variable charge.
- (iii) Agrotechnology Transfer: The Benchmark Symposium.

#### *Discussion Group Topics*

The Discussion Groups will cover topics arising from the poster and plenary sessions. Each Discussion Group will be limited to 30-40 people. Topics will include: genesis, morphology, classification, soil interpretation and land use, mineralogy, surface reactions, phosphate, soil chemistry, soil physics, fertilisers, agronomy, horticulture, forestry, engineering, soil analysis, organic matter, trace elements, biology, extension services, agrotechnology transfer.

#### *Specialist Interest Groups*

The Programme Committee wishes to assist special interest groups to meet during the conference. Time for such meetings has been set aside on Saturday 14 February.



## **Pre-conference Book**

This book, entitled '*Soils with variable charge*' is being published by the New Zealand Society of Soil Science, and is supplied as part of the registration fee to all full participants. Details of the book are given under 'Conference Programme'. Members of the ISSS or the NZSSS who do not intend to attend the conference may purchase this book before 1 February 1981 at a pre-publication price of NZ \$ 19.50. Later purchases, to be made through the N.Z. Society of Soil Science, will be at NZ \$ 25.00 per copy.

## **Tours**

### *New Zealand*

A number of pre- and post-conference New Zealand tours have been organised. There will also be a one-day mid-conference tour.

### *Overseas*

Pre-conference tours in Hawaii and Indonesia before the New Zealand pre-conference tours and a post-conference tour in Australia after the New Zealand post-conference tours, have been organised. Persons wishing to participate in the tours should contact Dr J. A. Silva, Principal Investigator, Benchmark Soils Project, Dept of Agronomy and Soil Science, University of Hawaii, 3190 Maile Way, Honolulu, Hawaii 96822, USA (Hawaiian and Indonesian tours) or Dr A. W. Moore, Assistant Chief of Division, Division of Soils, The Cunningham Laboratory, Mill Road, St Lucia, Queensland, Australia 4067 (Australian tour) directly, as soon as possible, for further information including details of costs.

### *Tour Guide Books*

All tours will have comprehensive guide books supplied, which will also be available for purchase (at a cost of \$5.00) to those not taking part in the tours. The guide books will contain information on soils, land use, geology etc. and scenic features of the areas concerned.

**Address:** Dr. L. F. Molloy, Secretary General, Organising Committee, 'Soils with variable charge' Conference, Soil Bureau, DSIR, Private Bag, Lower Hutt, New Zealand.

## **ISSS Commissions IV, V and VI**

### **Cancelled:**

INTERNATIONAL SYMPOSIUM ON THE SOILS OF THE HUMID TROPICS OF AFRICA AND THEIR MANAGEMENT, *November 1980, Ghana.*

### **Postponed:**

INTERNATIONAL SYMPOSIUM ON SOIL PROBLEMS ASSOCIATED WITH IRRIGATION IN ARID STEPPE AND SAVANNAH REGIONS, *1980, Ghana.*

Potential participants to the above two meetings are however welcome to attend the *First OAU Inter-African Soil Science Congress* that is to take place in Ghana from 10th to 15th November 1980.

**Information:** Dr. H. Obeng, Soil Research Institute, PMB Academy Post Office, Kwadaso-Kumasi, Ghana.

# IUFRO/ISSS INTERNATIONAL WORKSHOP ON LAND EVALUATION FOR FORESTRY

*from 10 to 14 November 1980 in Wageningen, the Netherlands*

under the auspices of IUFRO (International Union of Forestry Research Organizations) and ISSS, Working Group on Land Evaluation.

Participation to the workshop is restricted to a small number of experts (see ISSS bulletin no. 55). The program of the workshop has been established as follows:

## **Programme:**

10 Nov. *Presentation of papers on 'The State of the Art'*

- Dynamics of forest ecosystems in relation to their utilization; temperate and tropical regions - Prof. Ir. E. F. Brüning.
- Dynamics of forest ecosystems in relation to their utilization; temperature and cooler regions - Dr. D. C. Malcolm.
- Inventory techniques and classification of forest resources - Ir. S. Andel.
- Inventory techniques and classification of single components of land (soil, climate, topography, etc.) -?
- Integrated approaches to inventory techniques and classification of natural resources - Mr. R. G. Bailey.
- Land and site classification systems used in forestry - Dr. W. Kilian.
- Terrain classification systems used in forestry - Mr. S. Berg.
- FAO experience with land classification for forestry in developing countries - FAO.

11 + 12 Nov. *Presentation of papers on 'Land evaluation, a new approach'*

- Basic concepts of land evaluation - Dutch working-party.
- Land utilization types for forestry - Dutch working-party.
- Land qualities and growth - Mr. B. Lundgren.
- Land qualities and forest operations - Prof. Dr. H. Löffler.
- Land qualities and conservation -?
- *Social and political aspects in relation to the selection of land utilization types* - Prof. R. Plockmann.
- A paper from the US Soil Conservation Service.
- Land suitability classification for forestry - Dutch working-party.
- Prospects of applying the framework for land evaluation to forestry in developing countries - FAO.

12 Nov. (afternoon) *Excursion into Wageningen*: visits to several institutes, as the Dutch Soil Survey Institute Stiboka.

13 Nov. *Field excursion* to: Veluwe forest areas and the Flevopolder; examples of land reclamation.

14 Nov. *Closing meeting*: Discussions in several groups; General discussion; Recommendations; Closing session.

**Proceedings:** To be published by the International Institute for Land Reclamation and Improvement (ILRI), in the beginning of 1981.

## **Addresses:**

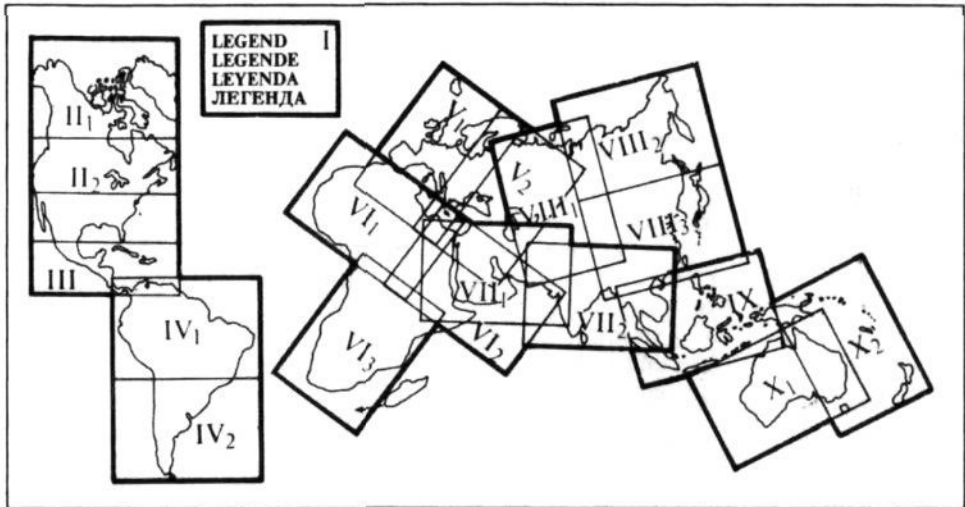
Dr. Ir. K. J. Beek (ISSS) - ILRI, P. O. Box 45, Wageningen, The Netherlands,  
Ir. C. P. v. Goor (IUFRO) and Ir. P. Laban (Secretary Workshop Committee) - De Dorschkamp, Bosrandweg 20, Wageningen, The Netherlands.

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**ACTIVITIES OF THE COMMISSIONS AND WORKING GROUPS**  
**ACTIVITÉS DES COMMISSIONS ET GROUPES DE TRAVAIL**  
**TÄTIGKEIT DER KOMMISSIONEN UND ARBEITSGRUPPEN**

**ISSS Sub-Commission on Salt-Affected Soils**

An *International Symposium on Principles and Practices for Reclamation and Management of Salt-Affected Soils* was organized and serviced by the Central Soil Salinity Research Institute (CSSRI) at Karnal, India, under the auspices of the Sub-Commission on Salt-Affected Soils of the ISSS and the Indian Council of Agricultural Research (ICAR). The meeting took place from 18 to 21 February on the premises of the CSSRI, followed by a post-Symposium tour confined to the north western part of the Indo-Gangetic alluvial plains covering parts of Haryana, Punjab and Uttar-Pradesh States and the Union Territories of Chandigarh and Delhi, from 22 to 26 February.

The Symposium was very well organized and attended by more than 200 delegates (73 from outside India) representing 25 countries and organizations. Thanks to the Organizing Committee's early contacts with most of the agricultural research organizations all over the world and the spontaneous response from the scientists, it was possible to publish 76 of the submitted papers in a very well edited and balanced book (570 pages), right at the time of the Symposium's commencement. Presentation of the technical papers and their discussion was given adequate time (15 minutes each) and was spread over 12 sessions dealing with: characteristics, diagnostic criteria and methodology, leaching, genesis and classification, salt movement, physiological aspects, physical properties, amendments and reclamation, water quality and crop response to salinity, genetics and plant breeding, nutrient relations, and technology.

The inaugural function started with a worship song to Goddess Saraswati (Goddess of learning), followed by a speech given by Dr. J. S. P. Yadav, Director, CSSRI, welcoming the participants and briefly describing the Institute's activities. In his opening remarks, Dr. O. P. Gautam, Director-General, ICAR, proposed that full use should be made of the facilities of CSSRI to establish an international training course on salt affected soils and to promote international cooperation on soil amelioration programmes. The Chairman of the Organizing Committee, Dr. D. R. Bhumbra, gave a historical review of the salt affected soils of India, which happen to exist for ages, and how Indian scientists are managing to restore them.

Dr. J. S. Kanwar, President of ISSS, on behalf of over 7 000 members of ISSS, conveyed his good wishes for a successful gathering. He suggested that the Symposium may like to add three more P's: 'Prevention', 'Performance' and 'Priorities' to those of 'Principles' and 'Practices', thus making it a Symposium of five P's. He praised the Indian experience in testing research results on operational scale and transferring findings to farmers' fields. Dr. Kanwar, realizing the world-wide impact of the salt affected soils problems and the existing knowledge to tackle them, has called for a world time-bound crash programme for the amelioration of these lands.

Dr. I. Szabolcs, Chairman of the Sub-Commission, stressed in his remarks the global nature of the problem and endorsed the need for international action. The Sub-Commission has the duty to promote international cooperation and exchange of information among scientists in order to find out solutions to salt affected soils problems and advice on their reclamation and management for proper agricultural production. He referred to the present Symposium being the latest in a series that



*An innovative method to bypass the sodicity problem in soils: A sapling of a Eucalyptus hybrid is placed in an augerhole through the sodic layer, with different infill treatment. Roots develop well in the non-sodic substratum. (CSSRI Research Station at Gudda).*



*Explanation of the research work carried out at the CSSRI main station at Karnal, by Dr. I. P. Abrol (centre, with cap.), Head of the Division of Soils and Agronomy.*



took place in 1964 (Hungary), 1969 (USSR), 1971 (Spain), 1972 (Egypt), 1976 (USA) and 1978 (Canada) as one of the approaches to fulfill this duty.

The interest in the Symposium activities was not only the concern of individual scientists but also of international organizations. Dr. R. Dudal, Director of the Land and Water Development Division of FAO, expressed the Organization's interest not only in the techniques of reclaiming salt affected soils, but also in their management, development and preventive occurrence. FAO is looking for the application of research findings to land development and agricultural improvement programmes with a view to raising food production and rural population standards.

The inaugural address was given by Dr. M. S. Swaminathan, Secretary, Department of Agriculture and Cooperation, Government of India, who presented some thoughts: better management of coastal soils to reduce salinization and control erosion, reactivation of soil resources through breeding and management, the need for salinity prevention strategy that depends on simple packages of practices, better management of black salt affected soils by adopting suitable water use techniques, use of solar energy in desalinization techniques, and building up and maintenance of soil fertility of reclaimed lands. A vote of thanks was expressed by Dr. I. P. Abrol, CSSRI, to all participants, organizations and national staff who contributed to the success of the meeting.

No account is given here on the individual papers presented at the technical sessions, because the Proceedings are already available in book form (Bhumbla D. R. and J. S. P. Yadav (eds.) 1980: 'Proceedings Intern, Symposium on Salt affected Soils 1980'. Central Soil Salinity Research Institute, Karnal - 132001, Haryana, India). Mention should however be made of a session devoted to special lectures. Dr. D. R. Bhumbla reviewed the work on salt affected soils in India. Dr. R. Dudal gave a lecture on land resources for population of the future. He informed the Symposium on FAO's land resources work related to the Soil Map of the World, Agro-ecological Zone Studies, assessment of Soil Degradation, Agricultural Towards 2000, with special reference to optimized land use and ensuring sustained production. Dr. G. Hoffman and Dr. J. Oster of the U.S. Salinity Laboratory presented the outline of the revised version of USDA Hand Book 60, which will be published in its final form in early 1981. The reporter presented a brief outline of the provisional methodology for assessment of soil degradation, with special reference to salinity and sodicity degradation intensity limits.

In the closing session, Mr. T. C. Stoneman (Australia) presented the Symposium report and recommendations. He expressed on behalf of the participants his sincere appreciation to the ICAR and the Government of India for hosting the Symposium and to the Director and staff of the CSSRI for their efforts in successfully organizing the meeting at Karnal and publishing the Symposium papers in advance. He further commended the Indian researchers on their presentation and quality of studies.

The Symposium adopted the following *recommendations*:

- that relevant international organizations continue their efforts to organize and service training courses on the reclamation and management of saline and sodic soils;
- that the next Congress of the International Society of Soil Science consider devoting a session to socio-economic consequences and technical constraints limiting land reclamation. Invited speakers from countries with land reclamation projects would be asked to present case studies;
- that the next Congress of the International Society of Soil Science deal with soil and water management, particularly drainage, as an important component in the long term reclamation of salt affected soils, possibly through its Commission VI;

- recognizing the work of the international organizations (FAO, Unesco, UNEP, etc.) as well as national institutions in assessment of land resources and their degradation hazards, recommends countries to make full use of the available information for planning and implementing land development projects, after verification of the proposed methodologies at a regional and country level;
- realizing that production of many salt affected soils could be improved by simple amelioration techniques and that economical returns could be obtained by application of major and minor nutrients and organic recycling, recommends that such techniques receive wide publicity and application through cooperation of soil scientists and extension services;
- noting the high cost of land reclamation and the fact that the problem of utilization of salt affected soils is aggravated in dry land farming areas, recommends that more attention be given to improved production techniques and to alternative types of land use in semi-arid areas.

Dr. Dudal gave the valedictory address. He acknowledged the contribution made by researchers in India and the continuity in their work as reflected by the three generations attending the Symposium who had been involved in the development of salt affected soils in the country. However, he pointed out that more attention should be given, in future studies, to the socio-economics of land reclamation and the soil/water/plant/man relationships. He pleaded for translating the results of research into simple guidelines for ameliorative and agronomic techniques and for a more active transfer of research findings to farmers' fields.

The reporter participated in part of the post-Symposium tour to visit sodic reclamation projects in the Punjab and Haryana states, the Punjab Agricultural University at Ludhiana and a project for soil and water conservation at the village of Sulkho, lying in the Siwalik hills. The experimental work, whether in the state agricultural research centres, university or farmers' fields, is very systematic, development oriented, and adaptable to practical conditions. It has been demonstrated how the sodic soils of that part of India could be reclaimed through irrigation of a rice/wheat rotation and application of gypsum and fertilizers. Phosphorus fertilization and zinc application became more important after several years from cultivation. Certain grasses and legumes have been tested and found to be more tolerant to salinity than those traditionally used. The soil and water conservation small scale project is an example that should be followed as it has a direct impact on community development, increased agricultural production and prevention of silting up of downstream lakes. It must be stressed, however, that the specific environment of the Haryana and Punjab areas has to be taken into account before transfer of technology is decided upon.

In conclusion, the Symposium has succeeded in achieving its objectives. Scientists from various countries got the opportunity to meet, present their research findings, exchange their experiences and identify the future line of work. Most of the presented papers have a direct approach to identification and solutions of problems, but more remains to be done in farmers' fields. The Indian experience has given good example along this line. However, as the agro-ecological conditions can be different in other countries, conclusions should not be over-generalized. Nevertheless, the systematic approach and methodology of research can be transferred.

The Symposium was indeed a good opportunity to know about the rich Indian culture and warm hospitality. It is a true indication of the forth-coming success of the 12th International Congress of Soil Science in India, February 1982.

Fathy I. Massoud, FAO-Rome

## ISSS Subcommission on Soil Micromorphology

Two advisory panels have been set up which are elaborating schemes and terminologies for micromorphological descriptions.

### *Advisory Panel on Descriptive Systems*

The task of this advisory panel is to produce, before the next meeting of the subcommission, guidelines for the standardized description of soil thin sections, as a continuation of part of the activities of the former Working Group on Soil Micromorphology.

A first meeting took place in the Netherlands Soil Survey Institute (Wageningen) from 12 till 16 November 1979. The meeting was attended by ten members and an observer from the International Soil Museum (ISM).

Manuscripts covering practically the whole field of qualitative soil description in thin section were presented by different members and discussed thoroughly. On most points general agreement could be reached, or suitable compromises were worked out. In fall 1980 a first complete manuscript should be ready. One afternoon the members of the Panel visited the ISM in order to discuss with the staffmembers problems concerning the micromorphological descriptions of the exhibited profiles.

### *Advisory Panel on Weathering and Neoformations*

The task of this panel consists in the preparation of guidelines for the description of weathering minerals and rocks and their secondary products. It continues the work of the former subgroup of the same name. A first scientific report was published last year (*Guidelines for the description of mineral alterations in soil micromorphology. Pedologie* 29, 1, 121-135, 1979), a second is in print (*Olivines, their pseudomorphs and secondary products. Pedologie*).

During the last meeting, held from 18 till 21 September 1979 in the F. A. L. in Braunschweig (Germany), the morphology and fabric of the weathering of rock-fragments in soils was discussed, as well as the weathering morphology of the phyllosilicates. These themes will be developed further during the next meeting (State University of Ghent, Belgium, March 1980).

### *The International Working Meeting, London, 1981*

Preparations for this meeting are well advanced. Some 270 persons answered the first brochure and the second brochure is being sent out now.

The Organising Committee has tried to select an interesting programme, with something to interest the beginner as well as the specialist. The Committee in drawing up the programme, has attempted to emphasise the discussion aspects of the Working-Meeting. There will be a number of invited review papers supported by poster papers. Much emphasis will be given to the latter, which will replace the orally delivered 15-minute contributions. The Committee feels that all attending should benefit from this emphasis. All sessions will be plenary so that everyone who wishes to, can listen to all papers and take part in all discussions. In addition there will be two forums, one on preparation techniques and problems, the other on humus forms. There will be a midweek excursion included in the registration cost and parallel post-Conference excursions through England and Wales and through Scotland.

### *Newsletter*

The Subcommission has prepared a first issue of a cyclostyled Newsletter for all interested micromorphologists. Those wishing to subscribe are requested to contact the editor: Dr. P. Bullock, Soil Survey of England and Wales, Rothamsted Experimental Station, Harpenden, Herts AL5-2JQ, England.

G. J. Stoops, Gent, Belgium

## VIIth INTERNATIONAL COLLOQUIUM ON SOIL ZOOLOGY

The VIIth I.C.S.Z. took place from 30th July to 3rd August 1979 on the campus of the State University of New York. The colloquium brought together 120 scientists from 21 nationalities belonging to five continents. Following the example of the VIth colloquium, in Uppsala – Sweden, the contributed papers were presented either in plenary sessions or in poster sessions. The theme was 'Soil biology and rural practices' with 8 subjects: pesticides and endogene organisms; refuse disposal and endogene organisms; anthropic selection of endogene organisms; relations of soil organisms with agricultural practices and stock raising refuse; the restoration of mining sites and soil organisms; forestry and soil organisms; fundamental soil ecology; human impact on the ecology of tropical soils. The Proceedings of this colloquium will be published soon (ed. D. L. Dindal).

The Presidency of the Soil Biology commission of ISSS has recorded the membership resignation of Dr. Jan Vanek – the organiser of the Vth I.C.S.Z. – in connection with his new duties, and has elected Dr. J. van der Drift a honorary life member in recognition of his decisive activity in the field of soil biology. The Presidency has also accepted the Belgian invitation to hold the VIIIth Colloquium at the Catholic University of Louvain-la-Neuve (Belgium) in 1982. The theme 'New tendencies in pedobiology' was chosen for this meeting, so as to highlight the really innovative aspects of the discipline.

M. B. Bouché, Dyon, France

Commission III of ISSS issues a cyclostyled international news bulletin for its adherents, called *Pedofauna*. It can be obtained directly from the editor: M. B. Bouché, I.N.R.A., B.V. 1540, F21034 Dyon-Cedex, France.

## VIIème COLLOQUE INTERNATIONAL DE ZOOLOGIE DU SOL

Le VIIème C.I.Z.S. s'est tenue du 30 juillet au 3 août 1979 dans le campus de l'université de l'état de New York. Ce colloque a réuni 120 chercheurs de 21 nationalités différentes appartenant aux 5 continents. Suivant l'exemple du VIème C.I.Z.S. d'Uppsala (Suède), les communications furent présentées en séances plénières ou en stands ('poster sessions') autour du thème 'Biologie du sol et pratiques rurales' selon 8 thèmes: pesticides et organismes endogés; décharges de déchets et organismes endogés; sélection anthropique des organismes endogés; relation des organismes du sol avec les pratiques agricoles et les déchets d'élevage; sites miniers, leur restauration et les organismes du sol; silviculture et organismes du sol; écologie du sol fondamentale; impact humain en écologie de sols tropicaux. Les comptes rendus de ce colloque devraient être publiés prochainement (réd. D. L. Dindal).

Le bureau du comité de zoologie de l'A.I.S.S. a enregistré la démission de Jan Vanek (l'organisateur du Vème C.I.Z.S.) en raison de ses nouvelles activités et a élu le Dr. Van der Drift membre honoraire à vie en hommage à son activité déterminante en notre domaine. Le bureau a également accepté l'invitation belge pour tenir le VIIIème C.I.Z.S. à l'Université Catholique de Louvain-la-Neuve (Belgique) en 1982. Le Thème 'Tendances nouvelles en pédobiologie' a été retenu pour promouvoir les aspects réellement novateurs de notre discipline.

M. B. Bouché, Dyon, France

Commission III de l'A.I.S.S. publie un bulletin international d'informations photocopié pour ses adhérents, nommé *Pedofauna*. Il peut être obtenu directement du rédacteur: M. B. Bouché, I.N.R.A., B.V. 1540, F21034 Dyon-Cedex, France.

## IN MEMORIAM



### **Dr. Charles E. Kellogg – Honorary Member of ISSS (1902–1980)**

Dr. Charles E. Kellogg, 77, retired head of the US National Cooperative Soil Survey and distinguished international soil scientist, died in Hyattsville, Maryland USA, on March 9, 1980. Born August 2, 1902, in Palo, Ionia County, Michigan, he received the B.S. (1925) and Ph. D. (1929) degrees from Michigan State College. Later, he received honorary Doctor of Science degrees from the University of Gembloux, Belgium (1960), from North Dakota State University (1962), and from the University of Ghent, Belgium (1963).

Following 2 years of work with the Wisconsin Natural History Survey (1928–30), Kellogg accepted the post of professor (in charge) of soils at the North Dakota Agricultural College. During his 4 years at North Dakota, he attracted and trained a remarkable group of students and reactivated the State soil survey. He also initiated a system of agricultural land classification based on soil, geographic, and economic factors that was adopted by many county governments as a rational method of evaluating land for tax purposes.

Dr. Kellogg moved to Washington, D.C., in 1934 as a special assistant to the famed Dr. C. F. Marbut, Chief of the U.S. Soil Survey. When Dr. Marbut died while on a field trip in Manchuria, Dr. Kellogg was appointed Chief of the Soil Survey, a position he held under one title or another for more than 37 years. At the time of his retirement in 1971, he was deputy administrator for soil survey of the Soil Conservation Service, U.S. Department of Agriculture. Under his leadership, the Soil Survey grew from a few scattered field parties to an organization of more than 1,400 soil scientists working in all the States and three laboratories. He directed the continuous expansion of soil survey interpretations for farming and nonfarming uses and promoted the development of an entirely new soil classification system published under the title, *Soil Taxonomy: A Basic System of Soil Classification for Making and Interpreting Soil Surveys*. He wrote the first edition of the *Soil Survey Manual*, published in 1937, and directed the enlarged, revised 1951 edition, which has been widely adopted by soil survey organizations around the world.

Throughout his professional career, Dr. Kellogg devoted much of his skill and energy to the use of soil science to improve agriculture throughout the world. He was a former Vice President of the American Association for the Advancement of Science, and was 1941 President of the Soil Science Society of America. He had a keen interest in the International Society of Soil Science and, with the late Professor Edelman, played a large role in its revitalization after World War II. He was a Vice President of the Society from 1956 to 1960, and was a U.S. delegate to the 4th, 5th, 6th, 7th, 10th, and 11th International Congresses, spanning the period from 1935 to 1978. He also served as consultant to many foreign governments and international agencies and traveled extensively in 20 countries on four continents in carrying out scientific explorations and assistance projects. In 1945, he served with distinction as the Secretary of the Committee on Agriculture at the organizing



conference of the Food and Agriculture Organization of the United Nations in Quebec City.

Dr. Kellogg felt strongly his responsibility as a scientist and administrator to share his ideas and discoveries with others. He published more than 170 papers on soils, land classification, geopolitics, agricultural development, and conservation. He was the author of 7 books, including the tremendously popular text, *The Soils That Support Us*.

Many honors were bestowed on Dr. Kellogg besides the Doctor of Science degrees mentioned above. He was a Fellow of the American Association for the Advancement of Science, the American Society of Agronomy, and the Soil Science Society of America. He was an honorary member of the International Society of Soil Science, the Royal Society of New Zealand and the Indian Society of Soil Science. In 1950 he was presented the U.S. Department of Agriculture's highest award, the Distinguished Service Gold Medal. His alma mater, Michigan State University, granted him its Distinguished Service Award in 1955 and the Outstanding Alumni Award in 1963. He was a guest of the Academy of Sciences of the USSR for its Jubilee Anniversary Session in Moscow and Leningrad in 1945.

Dr. Kellogg was an inspired leader, a brilliant soil scientist, and a remarkably effective leader and administrator. He taught by example the importance of soil classification as a vehicle for technology transference. He showed the criticality of soil interpretations to the design of soil surveys. He taught the role of soil surveys as essential data for agricultural development. He extolled resource conservation not as preservation for its own sake, but as rational and prudent management of soil and water. He will be remembered and respected for his creativity in a broad range of soil-related activities, for his unswerving integrity, for his forward-looking leadership, and for his dedication to science in the service of humanity. His courage, his devotion to the Soil Survey, and his unfailing support of those who worked with him served as a model to his associates. His memory will be an inspiration to all those who worked with him.

W. M. Johnson, Washington, USA



**Professor Dr. A. A. Rode – Honorary Member of ISSS (1896–1979)**

Soviet soil science suffered a heavy loss as A. A. Rode, Professor, Doctor of sciences, an outstanding Soviet pedologist, the oldest member of the Dokuchaev Soil Institute Staff, died on December 20, 1979.

A. A. Rode was born in Leningrad in 1896. He studied at the Petrograd Agricultural Institute. After graduation in 1923, he worked till 1928 in the laboratory headed by academician K. K. Gedroits in the field of soil chemistry and physical chemistry. During the period 1928–1979 A. A. Rode worked at the Dokuchaev Soil Institute. His fundamental publication 'The Podzol-forming Process' in 1927 earned him the degree of Doctor of Agriculture. In 1939 he received the Professor title. A. A. Rode headed the laboratory of podzolic soils

from 1935 to 1938 and the laboratory of soil chemistry from 1938 to 1948. Since 1951 till 1974 he was at the head of the laboratory of soil hydrology, unique in the USSR.



The basic trends of the investigations of A. A. Rode and his professional staff were the study of soil genesis, the modern soil processes and the regimes and balances of the soil moisture in the first run. The long-term investigations of the soil processes in the field were organized and carried out by A. A. Rode at 9 stationary sites on different soils in various geographical areas.

The fundamental, complex investigations of the natural soil processes were carried out simultaneously with the soil matter migration study, both in the laboratory and under field conditions.

On the basis of a generalization of the vast amount of field and experimental data A. A. Rode has developed the theory of soil hydrology, which includes such problems as properties and forms of soil moisture, the law of soil moisture migration and its regimes in various soil types. The most profound contribution of A. A. Rode to the theory of soil hydrology was recorded in a number of monographs 'Soil Moisture', 'Types of Soil Moisture Regimes', 'Theory of Soil Moisture' (volume I and II) and others.

A. A. Rode was the founder of the Soviet soil hydrology school indeed. Due to his vast knowledge, broad professional interests and great capacity for work, he also made a valuable contribution to many fields of soil science: soil genesis, soil chemistry, methods of soil investigation, history of the Russian soil science. His well-known monographs 'The Soilforming Process and Evolution of Soils', 'The System of Soil Investigation Methods' and others are of both theoretical and methodological importance and attained mutual recognition. A. A. Rode was the author of more than 250 publications including 11 monographs, and a text-book of soil science.

The scientific activity of A. A. Rode is well-known over the world. His text-book on soil science was translated into many languages.

A. A. Rode was an active participant of a number of International Congresses, Meetings and Symposia. He was an associate editor of the International Handbook on Methods of Soil Structure Investigations and a member of the International Commission on Terminology in Soil Physics. A. A. Rode was the editor-in-chief of the Explanatory Dictionary of Soil Science, which was translated into the Japanese language by I. Kann in 1979.

In 1974 A. A. Rode was elected a Honorary Member of the International Society of Soil Science. He was also a Honorary Doctor of the Berlin Humboldt University. In recognition of his outstanding achievements, Professor Rode received the Dokuchaev Prize – the highest award in soil science –, the Order of Lenin, and a number of medals.

A. A. Rode devoted much attention to the organization of scientific research in soil science and to educational activities. He was a man of principle, vast knowledge and humanity; a person with a great soul. He was very exacting himself and responsive to every person he met.

A. A. Rode was held in respect and affection of all those who knew him and worked with him.

Soil scientists will remember A. A. Rode as an outstanding personality and a scientist of the highest quality and great enthusiasm.

All-Union Society of Soviet  
Soil Scientists, Moscow, USSR



### **Professor Dr. Leonard D. Baver (1901–1980)**

Leonard D. Baver, 78, emeritus professor at Ohio State University, died May 1, 1980 in San Mateo, California.

Dr. Baver was born December 8, 1901 in Miamisburg, Ohio, where he attended public schools. He graduated with a B.S. degree from Ohio State University in 1923 and earned a M.S. degree in soil chemistry at the same university in 1926. Dr. Baver obtained the Ph. D. degree in soil science from the University of Missouri in 1929. He was granted honorary Doctor of Science degrees from the University of Hawaii in 1962 and North Carolina State University in 1965. He served as president of Commission I (Soil Physics) of the International Society of Soil Science, president of the Soil Science Society of America, and was a fellow in the American Society of Agronomy and the Soil Science Society of America. He was USAID consultant on agricultural

production for Indonesia, East Africa and Brazil and served on the Pontifical Academy of Science on Organic Matter and Soil Fertility.

Dr. Baver had a varied and distinguished professional career. His first position was Associate Soil Chemist at Auburn University in 1929, and he became Assistant Professor of Soils at the University of Missouri in 1931. He returned to Ohio State University as Professor of Agronomy in 1937. During these years he pioneered research concerning the role of clay minerals and exchangeable cations on soil structure and physical properties. While in Ohio he wrote the first edition of the well-known textbook *Soil Physics* that was published in 1940. This publication became a standard textbook in colleges and universities throughout the world and has been translated into several foreign languages. The fourth edition of this book was printed the year of his retirement. From 1940–48, Dr. Baver served at North Carolina State University where he was successively, Chairman of the Agronomy Department, Director of the Agricultural Experiment Station, and Dean of the College of Agriculture and Forestry. He played a major role in assembling a core of able agricultural scientists and administrators at that University, several of whom later became presidents of major universities in the U.S.A. The first official Ph.D. program at North Carolina State was established under his supervision in 1940, and many currently outstanding scientists received degrees under this program.

In 1948 he became Director of Research for the Hawaiian Sugar Planters Association and served in that capacity for 17 years. In this position he directed numerous research activities that emphasized the importance of both soil physical and climatological factors on soil management and crop production. From 1965–67, he served as Chief of Party for the OSU/USAID Contract Team in Udaipur, India.

In 1967 Dr. Baver again returned to Ohio State University as Professor of Agronomy and remained there until his retirement in 1972. During this period he was advisor to many graduate students and developed new courses in Agroclimatology and Crop Production in Developing Countries.

Dr. Baver was an outstanding individual in many ways. Personally, he was friendly, courteous and vivacious, and therefore liked and admired by all. Professionally, he was very astute and energetic as a researcher and enthusiastic and inspiring as a teacher. Soil Science has lost a great leader.

G. S. Taylor, Columbus, USA

**NEWS FROM THE NATIONAL SOCIETIES  
NOUVELLES DES ASSOCIATIONS NATIONALES  
BERICHTE DER NATIONALEN GESELLSCHAFTEN**

**Jugoslovensko Društvo za Proučavanje Zemljišta**

The sixth Congress of the Yugoslav Society of Soil Science is taking place in Novi-Sad, from 7 to 14th June 1980.

The topics of the Congress are as follows:

- Problems of the soils under intensive use.
- *Problems of the intensive production on defective soils, including drainage and other reclamation measures.*
- Land evaluation in plains and hilly areas.
- Soil mapping, soil classification with regard to accomplishment of the soil map of the Socialist Federal Republic of Yugoslavia, scale 1 : 50.000.
- Protection of natural environment with special regard to pedosphere.

Two Congress excursions are provided:

A. Pre-Congress Excursion (June 7-8)

B. Post-Congress Excursion (June 13-14).

*The program of the excursions is in compliance with the topics of the congress.*

*Address:* Prof. Dr. Miljkovic S. Nikola, Organizacioni odbor, VI Kongresa JDPZ, Poljoprivredni fakultet, 21000 Novi Sad, V. Vlahovica 2, Yugoslavia.

**Norsk Forening for Jordforskning**

The Norwegian Society of Soil Science elected its new Board members as follows:

Chairman:	Arnor Njøs
Vice-Chairman:	Arne Stuanes
Secretary:	Ole Øivind Hvatum
Treasurer:	Rolf Sørensen
Member (publishing):	Olav Prestvik.

*Address of the Secretary:* Department of Soil Science, Agricultural University of Norway, N-1432 Ås-NLH, Norway.

**British Society of Soil Science**

The British Society of Soil Science and the Society of Chemical Industry held a joint meeting, on 15th and 16th April 1980 in London, on the subject 'Dynamic Processes in the Soil/Plant System'. *Main themes were: 'Root system development', 'Biological factors influencing the supply of nutrients to plants', 'Transport of water and salts in soil', and 'Simulation of plant growth in field soils'.*

Forthcoming meetings of the Society are:

15-18th September 1980 (Oxford): Conflicts in Land Use.

7-8th April 1981: Soil Physical Conditions and Plantgrowth.

7-11th September 1981 (Aberdeen): Annual General Meeting and Autumn Meeting.

*Address:* D.V. Crawford, Secretary BSSS, University of Nottingham School of Agriculture, Sutton Bonington, Loughborough, LE12 5RD, England.

### **Czechoslovak Society of Soil Science**

The Research Institute for Crop Production, Prague-Ruzyně, the Agricultural University of Prague-Suchdol and the Czechoslovak Soil Science Society are pleased to announce that the *5th International Conference on Soil Science* will be held in Prague, Czechoslovakia, from 19th to 23rd August 1981.

Topics of the conference will be:

- Soil-ecological aspects of soil cover inventory and classification: special mapping, special classification, taxation, exploitation of remote survey methods.
- Soil and environment protection: transformation and translocation processes, material balance and cycles in soil and landscapes, contamination and protection of water resources, optimisation of soil and land exploitation.
- Present day problems of soil research: dynamics of soil processes, methods of analytical indication, models of processes in soil and lands.

The conference will be held at the Agricultural University of Prague, Prague 6 - Suchdol.

Field trips will be organised on 22nd and 23rd August 1981 (Saturday and Sunday). The languages will be Russian and English.

The deadline for submission of papers is 31st December 1980.

Accommodation and meals will be at the Students' hostel, Agricultural University of Prague (comparable with a B-class hotel).

*Address:* Dr. Ing. Z. Facek CSc., Chairman, Organising Committee, Res. Inst. for Crop Production, Division of Soils, 161 06 Prague 6 - Ruzyně, Czechoslovakia.

### **Sociedad Española de Ciencia del Suelo**

The General Assembly of the Society elected its new officers on 31st January 1980. They are the following.

Directiva:

Presidente:	Angel Hoyos de Castro
Vicepresidente:	Carlos Roquero de Laburu
Secretario:	Eloy Dorado Bernal
Tesorero:	J.A.Ortiz y Fernández Urrutia

Secciones:

	<i>Presidente</i>	<i>Secretario</i>
I.	José Martín Aranda	Francisco Díaz-Fierros Viqueira
II.	Francisco Guitián Ojea	Tarsy Carballas Fernández
III.	Eloy Dorada Bernal	Alfredo Polo Sánchez
IV.	Valentin Hernando Fernández	Jaime Porta Casanellas
V.	Antonio Guerra Delgado	José Luis Mudarra Gómez
VI.	José Luis Ontanón Sánchez	Miguel Dóñezar Díez de Ulzurum
VII.	Luis J. Alias Perez	Roque Ortiz Silla

The General Assembly coincided with the IXth Annual Scientific Meeting of the Society, which was held from 30th January to 1st February 1980 at the Estación Experimental del Zaidín in Granada. It had been decided beforehand that the themes of the annual meetings would be coordinated with the subject of major forthcoming

international meetings of ISSS. The present meeting therefore dealt mainly with Arid Soils (2 papers), Variable-Charge Soils (2 papers) and Saline Soils (6 papers).

After the meeting, participants joined in an edaphological tour, organised by Prof. Roquero, through part of the extensive and complex region of La Mancha (Area de la Sierra de la Solana, Herencia).

In addition to the general meetings, the various secciones held their own specialised meetings like the Seccion V (Madrid, December 1979) on 'La nueva clasificación de suelos propuesta por el ORSTOM', Seccion VI (Madrid, December 1979) on 'Unidades de manejo en el nego por aspersión con ala de desplazamiento', Seccion VII (Pamplona, June 1980) on 'Neoformación y evolución de minerales de arcilla en suelos sobre materiales igneos'.

The Sociedad Española now has about 250 members, who are *all members of ISSS* at the same time!

The Officers of ISSS hope that this example of automatic linkage of membership will be followed by many other national societies (the Norwegian Society is another one). The Sociedad Española is also to be commended for its vigorous reanimation of national activities.

*Address:* Secretario General, S.E.C.S, Serrano, 115. Op do, Madrid-6 España.

### **Indian Society of Soil Science**

The Second *All-India Symposium on Soil Biology and Ecology* (with special reference to termites) was held during 18th – 20th April, 1979 at the Department of Entomology, University of Agricultural Science, Bangalore. It was financed by ISSBE (Indian Society of Soil Biology and Ecology), Z.S.I. (Zoological Survey of India), U.N.D.P. (United Nations Development Programme), ICAR (Indian Council of Agricultural Research) and UAS (University of Agricultural Sciences). Dr. G.K. Veeresh, President of ISSBE welcomed the distinguished Soil Biologists attending the Symposium. Dr. H.R. Arakeri, Vice-Chancellor, UAS, inaugurated the Symposium and Dr. T.N. Ananthkrishnan, Director, Zoological Survey of India, presided over the inaugural function. Ninety Scientific papers covering almost all branches of soil biology were included in the Symposium. Attempts are made to bring-out the proceedings of the Symposium at an earliest possible date.

*Address:* M. Vikram Reddy, Nat. Bureau of Soil Survey & Land Use Planning, Regional Centre, Hebbal-560024, Bangalore, Karnataka, India.

**INTERNATIONAL RELATIONS  
RELATIONS INTERNATIONALES  
INTERNATIONALE VERBINDUNGEN**

**UNEP/FAO Expert Meeting on a World Soils Policy, March 1980, Rome.**

At the initiative of UNEP (the United Nations Environment Programme, Nairobi-Kenya), and with the organisational support of FAO, a first expert meeting was held to clarify and define a 'World Soils Policy'. A total of sixteen invited experts, from seven countries and eight international organisations, attended the meeting. They included the President and the Secretary-General of ISSS. Also fifteen representatives of UNEP, Unesco and FAO took part.

The meeting was officially opened on behalf of FAO by Mr. L. Huguet, Chairman of the IDWG on Natural Resources and Human Environment and by Mr. S. Evteev, Assistant Executive Director at UNEP. Dr. E.G. Hallsworth, Past President ISSS, acted as Chairman throughout the meeting, and Prof. Dr. P.M. Ahn of Nairobi as Secretary/Rapporteur.

*Review of international activities*

The first part of the meeting dealt with a review of some of the international activities in the field of soils, by various international bodies and organisations:

**UNEP**

A representative from UNEP outlined the main soil-related activities to date, and the various decisions at the first to seventh meetings of the UNEP Governing Council relating to those activities. UNEP as a non-executive agency works in co-operation with other organisations. The breadth of soil-related activities so far is illustrated by projects dealing with (a) the reclamation of land distributed by surface mining in Indonesia, Malaysia and Thailand; (b) environmental problems of the coal industry-symposium held in Poland; (c) research on mixed cropping, soil fertility and related topics at IITA in Nigeria and elsewhere; (d) the world assessment of soil degradation (jointly with FAO); (e) training courses on sand dune fixation, saline soils and rangelands in the USSR; (f) the programme for the application of integrated soil management techniques; (g) support for the IFIAS 'Save Our Soils' project; (h) a seminar on desertification control in China, and (i) the integrated project on arid lands (jointly with FAO and Unesco in Kenya, Tunisia, the Near East, Argentina, Bolivia, Chile and Peru. Finally, UNEP concern with the need for a soils policy had led to the calling of the present meeting of experts to advise the UNEP Governing Council on this topic.

**FAO**

The representatives emphasized the long study of soils which had been made by FAO over the last 25 years, and the varied experience so gained. At present FAO has 20 staff working on soil problems at headquarters and some 80 in the field, concerned with projects in many countries, so that it is not possible to give a picture of the whole programme in a few sentences. However, these activities could be considered and summarized under four headings: the mapping of soil resources, land evaluation, studies of land use potentials, and soil management and conservation.

Soil mapping had been carried on during the last 20 years since the International Society of Soil Science recommended that FAO and Unesco undertake this task in 1960. In the early 1970s this mapping work was broadened to include interpretation and land evaluation. The world soil map at a scale of 1:5 million had been issued in 19



sheets, with 10 explanatory volumes. Apart from providing an inventory of the world's soil resources, the project had resulted in a legend agreed to by the major groups of world soil scientists with 106 mapping units in 26 groups, with 5,000 soil associations mapped. Follow-up activities included the soil degradation assessment project, carried out with Unesco and UNEP support, the final maps of which are now being printed. An updating of the soils map, with an improved legend, is also envisaged.

Land evaluation activities included varied and numerous field projects which provided feed back information to the regular on-going work in Rome on quicker and more reliable land evaluation methodologies. Reference was made to the FAO Soils Bulletin No. 32 entitled 'A framework for land evaluation' which dealt with the principles behind these methodologies: further work now is on a step by step guide or manual on how to carry out land evaluations and establish relevant criteria and critical values. A manual for rainfed land evaluation is scheduled for 1980, to be followed by others on evaluation for irrigated agriculture, for forestry and for range management.

Soil conservation activities of FAO were linked with land evaluation since the aim was to achieve a sustained use of the land without serious erosion or degradation. Although land evaluation is based on physical parameters, it must be seen in its socio-economic context.

The FAO 'Agro-ecological zones' study was described by a representative as designed to give a first approximation of the productive potential of the world, as divided into appropriate agro-ecological zones, considering a number of specific crops in relation to rainfed agriculture (for details on the methodology see ISSS Bulletin no. 33).

Soil management and conservation activities of FAO were described as being carried out in 8 countries in Asia, 15 in Africa and 10 in Latin America, covering not only soil management but also organic recycling and land reclamation. Apart from action programmes, the work includes the dissemination of information through technical soils bulletins and training courses. The philosophy behind the activities is that of an



*The presiding committee of the World Soils Policy meeting: Dr. R. Dudal (Director, Land and Water Development Division, FAO) at left, Prof. Dr. E. G. Hallsworth (Australia|UK) in the Chair, and Prof. Dr. R. Olembo (Director, Division of Environmental Management, UNEP) at right.*

integrated soil and water conservation management, based on the capabilities of the land, and an appropriate land use. Soil management includes reclamation of degraded soils and the restoration of their fertility. The overall emphasis is therefore on action programmes and the transfer of knowledge of appropriate practices.

## UNESCO

A Unesco representative stressed the fact that Unesco activities in the field of soils had long been closely associated with those of FAO. Some twenty years ago Unesco was mainly concerned with its soil work on arid zones and on the soils of the humid tropics, looking particularly at soil genesis and classification. A great deal of information has been published on these topics. In a second period since then, Unesco activities in the field of soils had been dominated by work on the soil map of the world. This work has led more recently to follow-up activities such as the soil degradation investigations (in association with FAO) and the desertification project; the most recent development in these fields is that the degradation legend developed for Africa and the Near East is to be tested in other areas.

Current activities envisage further work on the soil map legend, but are mainly concerned with the MAB (Man and the Biosphere) programme, which deals with ecosystems of which soils are a part, and with the establishment of biosphere reserves which are to be carefully characterized; soil experts in Montevideo, Nairobi and Jakarta are at present working on these aspects, in association with the International Soil Museum.

## ISSS

The Secretary-General gave a short outline of the organisation and the main activities of this single international organisation of professionals in soil science.

### Other International Organisations

Brief reviews of soil-related activities, supported in many cases by written material, were given by representatives of the following organisations:

- ICRISAT (the International Crops Research Institute for the Semi-Arid Tropics, Hyderabad India), Soil Research Programme: Dr. J. S. Kanwar.
- IITA (the International Institute for Tropical Agriculture, Ibadan, Nigeria), Soil Research and Integrated Land Development/Watershed Programmes: Dr. R. Lal.
- IAIAS (the Inter American Institute of Agricultural Sciences, San José, Costa Rica): Dr. F. Suarez de Castro.
- ACSAD (the Arab Centre for Studies of Arid Zones and Dry Lands, Damascus, Syria), Soils Division: Dr. A. Osman.
- ISM (the International Soil Museum, Wageningen, Holland): Dr. W. G. Sombroek (see ISSS Bulletin no. 55).
- USAID/SCS Soil Management Support Services Program, Washington, U.S.A. (see ISSS bulletin no. 56), and the Benchmark Soils Project, Puerto Rico and Hawaii: Dr. W. M. Johnson.
- ORSTOM (Organisation de Recherche Scientifique Technique d'Outre-Mer, Paris France), Section Pédologie: Dr. F. Fournier.
- IIASA (the International Institute for Applied Systems Analysis, Laxenburg, Austria), Resources and Environment/Food and Agricultural Programs: Dr. J. Hirs (see ISSS Bulletin 56).
- IFIAS (the International Federation of Institutes of Advanced Sciences, Stockholm Sweden), Save-Our-Soils Project: Prof. Dr. E. G. Hallsworth.
- SCOPE (Scientific Council for Problems of the Environment of ICSU, Paris, France), Land Transformation Project: Prof. Dr. S. Hénin.

- CWFS (Centre for World Food Studies, Wageningen, Holland): Prof. Dr. P. Buringh.
- IBSRM (International Board of Soil Resources Management\*): Dr. M. Drosdoff.

After these presentations a discussion ensued on the need for harmonisation and coordination of international activities in the field of soil science. This led to the following recommendation by the Expert Meeting:

Due recognition should be given to the very great value of on-going soils work being carried out by various national, international, bilateral, regional and other organizations. However, in view of the serious threats to the productive capacity of land resources in various parts of the world, it is considered that the impact and usefulness of this work would be further increased by a greater degree of harmonization and coordination, aimed at avoiding duplication and making more effective use of the resources available. It is therefore recommended that an increased exchange of information be achieved and that gaps be identified so as to establish priorities for soil-related activities.

While expressing appreciation to UNEP for its initiative in calling this valuable preliminary meeting on soils policy, it is requested and recommended that further regular meetings with an increased participation and representation be called at least once a year.

It is further recognized that there is a need for a clearing house function to be established, for the collection and exchange of information on practical applications of soil research for the development and conservation of land. Such a function should be established at once, and continue for 2-3 years in the first instance. Later on this function might be taken over by some other organization, possibly by the proposed International Board of Soil Resources Management. It is therefore requested that UNEP, FAO and Unesco take the necessary steps to support these and related activities, in cooperation with appropriate regional institutions.

### *Soils Policy*

The second part of the meeting dealt with elements of a world soils policy and the need for an international plan of action. This was done on the basis of two papers: a) a substantial background discussion paper, prepared by consultants, and b) a paper presented by H.E. Ambassador G. Nanetti Concha, Colombian Ambassador and Representative to UNEP, on behalf of its Executive Director. In these papers, the importance of proper soil management and the combat of soil erosion/land degradation was stressed, also in relation to population increases. The discussion led to a comprehensive recommendation by the participants. Some elements of this are:

In recognition of the fact that the soil and land resources of the earth are finite, and that there is competition for the use of land for agriculture, forestry and urban development, it is emphasized that governments need to have firm policies for the use and management of their land and soil resources, taking into consideration scientific, technical, legal, cultural, educational and institutional aspects.

It is emphasized that a soils policy encompasses much more than erosion control. It includes making an inventory of and evaluating soil resources, and conserving, managing and improving them with due consideration of the environmental qualities and functions of the soil.

*\*A proposed body, emanating from an international meeting of invited soil scientists at Los Baños - Philippines in June 1979, on the subject 'Priorities for Alleviating Soil-related Constraints to Food Production in the Tropics'. This meeting was organised by the International Rice Research Institute (IRRI - Dr. D.J. Greenland) and Cornell University (Prof. Dr. A. van Wambeke).*

At the *international* level, it is suggested and requested that a clear, concise soils policy statement expressing the urgency of conservation of the world's soil resources be prepared, for discussion and adoption at a next expert meeting, and that thereafter, it should be released under the authority of UNEP, FAO and Unesco.

It is further stipulated that efforts should be made to implement such a policy. It is noted that this implementation should be supported by a comprehensive plan of action to be discussed at the next meeting. The plan of action should clarify what should be the responsibilities at the national level, and the roles of international and regional agencies and institutions. The plan should also specify the kinds of actions that must be taken to preserve, protect and enhance the world's soil resources. It should be the framework for national soils policies adapted to the needs of individual nations.

It is believed that specific actions at the *national* level which might be included in national soils policies could include:

- A systematic inventory of the distribution and quality of soil resources at the country level; and monitoring activities which would assess soil degradation and the degree to which national soil resources are being altered or affected.
- The initiation of action programmes for the conservation and improvement of national soil resources, based upon the trends made apparent by the inventorying and monitoring activities, and taking into account local socio-economic conditions.
- Governments should be able to draw upon assistance and guidance from the appropriate international organizations regarding suitable methodologies to implement both the surveys and the plans of action.

A soils policy document as referred to above is now being elaborated. The follow-up meeting, with much broader participation, is expected to take place in the beginning of 1981.

Secretary-General

Source: UNEP report W.G. 40/3



*The participants of the Sofia consultation on an international reference base for soil classification, in front of the bust of N. Poushkarov. Fourth from left the host of the meeting Dr. L. Glogov, seconded by Dr. M. Jamagne (France) and Dr. R. Dudal (FAO)*

## Towards an International Reference Base for Soil Classification

### *Introduction*

One of the features which distinguishes soil science from a number of other sciences is that there is no general agreement on the classification of the objects under study. There may be good reasons for this lacuna. Soil science is relatively young and the first attempts to classify soil as a three-dimensional body are barely a century old. Unlike plants or animals, which can easily be identified, soils constitute a continuum. Strikingly different soils can readily be separated but the break in classes within the continuum is to be decided upon by man.

Though soils do not generate, reproduce or have hereditary properties in the biological sense, it is a peculiarity of soil science that genesis has been used as a basis for classification. Different approaches are related to different concepts of soil formation held by various authors. Furthermore, different systems are strongly marked by the environment where they were conceived. They reflect the tendency to give more emphasis, at the higher levels of classification, to soils which occupy large areas in the region best known to the authors. Hence the limited place given to soils of the tropics in classifications developed during the first half of the century and the considerable importance given to soils occurring in the more temperate and cold climates.

The intensification of international communications, which started in the 1950s, witnessed the considerable expansion of soil surveys, both in temperate and tropical regions. The additional experience which was acquired, and the exchange of data between scientists from different parts of the world, greatly enhanced the overall knowledge of the soil cover. In the 1960s this knowledge crystallized in the form of a number of classification systems which aimed at embracing the full spectrum of the soil continuum.

It appears that these different systems duly recognized most of the major soils occurring in the world. However, they are distinguished at different levels of generalization and by different criteria, so that many units overlap and differ in their range of variability. Differences in terminology and nomenclature further add to the difficulties of establishing correlations and international understanding. There is a strong need for an international agreement on soil classification, both with regard to the principal classes to be recognized, as well as to the criteria and methodology for defining and separating them.

### *The Sofia Consultation*

A group of soil scientists from various national and international institutions and organizations met at Sofia from 5 to 8 May 1980 to discuss the possibility of establishing an international reference base of soil classification.

The consultation was convened by FAO and Unesco in cooperation with the ISSS and UNEP. The meeting was hosted by the N. Poushkarov Institute of Soil Science and Yield Programming of Bulgaria<sup>1</sup>. It is the idea that following the positive outcome of this first contact a wider consultation will take place, starting with 12th Congress of the ISSS in February 1982.

<sup>1</sup> Participation in the consultation was as follows:

Dr. R.W. Arnold (USA); Dr. I. Atanassov (Bulgaria); Dr. T. Boyadgiev (FAO); Dr. R. Dudal (FAO); Dr. H. Eswaran (Malaysia); Dr. K. Flach (U.S.A.); Prof. V.M. Fridland (U.S.S.R.); Prof. I.P. Garbouchev (UNEP); Acad. I.P. Gerassimov (U.S.S.R.); Dr. L. Glogov (Bulgaria); Dr. M. Jamagne (France); Prof. V.A. Kovda (U.S.S.R.); Dr. S.A. Krastanov (Bulgaria); Dr. V. Ninov (Bulgaria); Dr. A. Pécrot (FAO); Dr. L. Raidov (Bulgaria); Prof. E. Schlichting (ISS); Dr. W.G. Sombroek (ISSS/Unesco); Prof. R. Tavernier (Belgium); Dr. M.M. Yolevski (Bulgaria).



The consultation agreed that an international soil classification system should be prepared along the following principles:

- the classification of soils will be based on soil properties, including soil moisture and temperature regimes and the characteristics of parent material;
- soils will be defined in terms of diagnostic characteristics of the profile and of its horizons;
- the selection of the diagnostic characteristics should be based, as far as possible, on the relationships between soil properties and soil forming processes. The knowledge of soil forming processes can provide for a better characterization of soil classes and for ensuring that they are uniform;
- a soil classification is to be organized in categories at different levels of generalization. An international harmonization could initially limit itself to two, possibly three categories at the highest level. The subdivision in categories at the lower level could vary and depend on soil cover in the various countries. However, a methodology and criteria could be developed for making these separations at the lower level. Criteria at lower levels should include elements of practical importance for land use and soil conservation.

It is not the intention that national classification systems be replaced, but rather that a reference system be established through which different systems could be correlated and harmonized, starting with the highest categories.

It was felt that the legend of the FAO/Unesco Soil Map of the World could be used as a basis for discussions and that advantage should be taken of the international soil correlation which was already achieved through the project. It was recognized that the soil units used for the Soil Map of the World should be developed into a hierarchical system and that the definitions should be further improved. As a first step the consultation prepared a preliminary list of taxonomic units, which could be distinguished at a high level of generalization.

In order to implement the preparation of an international soil classification system the consultation recommended that an international project be launched by the four sponsoring agencies, FAO, Unesco, UNEP and the ISSS, in cooperation with all interested national institutions. It also recommended that such a project concurrently undertake the updating of the Soil Map of the World.

The consultation recommended that the results of the meeting be conveyed by the Bulgarian Government to the Heads of FAO, Unesco and UNEP.

It was recommended that the report of the consultation be submitted to the President of the ISSS and that the Chairman of Commission V make arrangements for the submission of this international programme to the 12th ISSS Congress. In the meantime, FAO, Unesco, UNEP and the ISSS will follow up on the recommendations of the panel.

R. Dudař, FAO, Rome, May 1980

Further developments in the preparation of an international soil classification system will be reported upon by the Chairman of ISSS Commission V, Prof. Dr. E. Schlichting, in due course.

*De nouveaux développements dans la préparation d'un système international de classification des sols seront rapportés à propos par le Président de Commission V de l'AISS, Prof. Dr. E. Schlichting.*

Weitere Entwicklungen in der Vorbereitungen eines internationalen Bodenklassifikationssystems werden zu gelegener Zeit rapportiert worden durch den Vorsitzenden der IBG Kommission V, Prof. Dr. E. Schlichting.



## **International Service for National Agricultural Research (ISNAR)**

ISNAR is the youngest member belonging to the international centers supported by the Consultative Group on International Agricultural Research (CGIAR). The CGIAR was organized in 1971 to bring together countries, public and private institutions, international and regional organizations, and representatives from developing countries in support of a network of international agricultural research centers and programmes. The basic objective is to increase the quantity and improve the quality of food production in developing countries. To this Consultative Group belong institutes such as the International Institute of Tropical Agriculture (IITA) in Nigeria, the International Center of Tropical Agriculture (CIAT) in Colombia, the International Rice Research Institute (IRRI) in the Philippines, etc. ISNAR is the thirteenth and newest member of the CG-family, and was established in the autumn of 1979.

Unlike the other international agricultural centers, ISNAR is a service organization. Its primary task is to strengthen the national agricultural research capabilities in developing countries. ISNAR will assist these countries – at their request – to plan, organize and manage research more effectively. This includes assistance in identifying research problems and in formulating research policies, the building up of an adequate institutional infrastructure, and the promotion of specific national or regional research programmes. ISNAR will complement the activities of the other centers of the Consultative Group. It will serve as a linkage between those centers and national agricultural research organizations. It will also assist developing countries to promote cooperation in the field of agricultural research with other countries and institutions and when needed to identify donors. ISNAR will work in close cooperation with all international organizations, in particular FAO, bilateral agencies and foundations. On March 1, 1980 the international Board of Trustees of ISNAR appointed the first Director-General of the Service. He is Dr. W. K. Gamble, at present Director-General of IITA, who will assume his new duties on September 1, 1980.

The Service is likely to have a core staff of about twenty persons and will be located in The Hague, The Netherlands.

W. van Vuure, Wageningen, the Netherlands

## **Panel Consultation on Strategy for Land Evaluation and Agrotechnology Transfers in the Tropics**

The Benchmark Soils Project of the Universities of Hawaii and Puerto Rico held a panel consultation at FAO headquarters in Rome on 10–12 March 1980. Representatives of European, North and South American Institutions attended the meeting; staff of the Land and Water Development Division of FAO participated actively in the discussions.

The purpose of the meeting was to programme the continuation of the Benchmark Soils Project as it now is reaching the completion of its basic research phase. Considerable effort has been made to demonstrate the hypothesis that soil units defined at the family level in the USDA Soil Taxonomy are adequate to channel agrotechnology from one site to another without loss of uniformity in the response to management practices.

The new phase of the project plans to develop a Benchmark Sites Network at selected representative locations in the tropics and subtropics. At each point the soil-plant-atmosphere continuum would be monitored in great detail during experiments involving major crops under different management systems; it would provide the necessary data to study cause-effect relationships between land qualities and crop requirements which would be transferable to comparable soil units throughout the tropics. In addition objective criteria to establish suitability classes in land evaluation schemes would be identified by the field experiments at each site, integrating soil and climatic factors.

The panel discussed the research methodologies, the organizational structure of the planned operations, and the implementation strategy of this new phase. The intent is to promote truly internationally coordinated research on soil properties which restrict plant growth. Research institutions in less developed countries would be the major executing agencies. A strong support infrastructure relying on accurate soil correlation by different systems and on precise climatic observations would provide an adequate basis for technology transfer. Soil and agroclimatic maps, data banks, and processing facilities would facilitate rapid access to research findings by agronomists, land-use specialists, and rural development planners.

A. Van Wambeke, Cornell, USA

#### Director-General of FAO visits ISM



*During his recent stay in the Netherlands, the Director-General of FAO, Dr. Eduard Saouma also visited the International Soil Museum in Wageningen. Details of the 'pedonarium' section are explained by the Director of ISM, Dr. W. G. Sombroek.*

**Third International Soil Classification Workshop held in Syria and Lebanon with a Follow-up Meeting in Greece (14–24 April and 1–3 May 1980)**

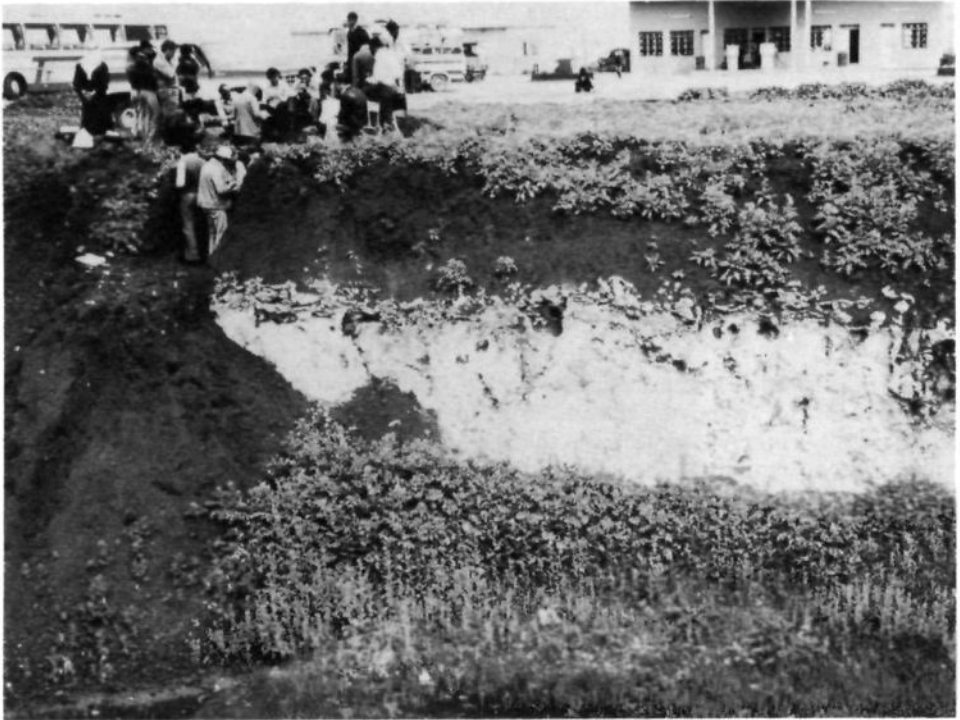
The Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) hosted the 3rd Soil Classification Workshop organised by the University of Puerto Rico (Dr. F.H. Beinroth) in cooperation with the Soil Conservation Service of the USDA; the University of Ghent, Belgium; ORSTOM of France; GTZ of West Germany; FAO-Rome, and other international and regional Organisations. Funding was provided by ACSAD and USAID. The Staff of the Soils Division of ACSAD, ensured an equally successful meeting as the first Workshop in Brazil (1976) and the second in Malaysia-Thailand (1978).

The Workshop is one of the series on Soil Classification organised by the University of Puerto Rico with the objective of testing and refining the U.S. 'Soil taxonomy'. As there are some inherent weaknesses in the classification of the soils in the intertropical areas, several committees (1) have been formed to examine the different aspects of Soil Taxonomy. The third Workshop was for the mandate of the International Committee on Soil Moisture Regimes (1). About forty Arabs and twenty foreign scientists attended the Workshop.

The Workshop opened with two days of discussion sessions, when papers on soil moisture regimes and soils in the arid parts of the world, were presented. The first draft



*International Soil Correlation in an Arabian environment...*



*The participants of the Workshop assembled on top of a road cut showing a vertic Xerochrept/Cambisol over a petrocalcic horizon.*

of the soil map of Syria was also presented by ACSAD. A special paper on 'Soil Climate in Soil Taxonomy' was prepared by Dr. G. Smith and presented by Prof. Dr. R. Tavernier as a working document. This was followed by a week of excursions in Syria and Lebanon. The profiles for study were carefully selected to illustrate not only the variations in soils in the region but also to highlight some of the problem areas in Soil Taxonomy.

On the terraces of the Euphrates river, the participants could evaluate the effects of irrigation on soil attributes and study soils with gypsic, hypergypsic and petrogypsic horizons. Around Raqqa, there are large areas of soils formed on volcanic cinders and ash and which do not have rain-fed agriculture; the adverse effects of the moisture regime and the material present special problems to the effective use of the soils. In the Beqqa valley in Lebanon, variations in soil climate over short distances result in marked differences in soil characteristics. Around the ancient Greek city of Palmyra, salt-affected soils (Salorthids) are dominant and in southern Syria, in the region dominated at one time by Nabatynians, the participants observed a range of soils proceeding from a Vertic Xerochrept to a Typic Chromoxerert in the weathering products of basalts. Finally, the intense biological activity induced by long term irrigation in an oasis was discussed at the soil profile in the Oasis of Ghotia and the concept of a Vermic epipedon was expounded by Prof. Tavernier. Each of the twenty-five soils studied were classified in the different classification systems and this interclassification comparison clearly showed the need for a more uniform and systematised scheme which will serve as a reference base for universal communication.

After this well organised excursion, the closing session dwelled on the taxonomic problems that had arisen during the field discussions. Several recommendations were made for considerations to amend Soil Taxonomy. As the current project on the soil map of the Arab world, which is being prepared by ACSAD in co-operation with the participating countries, was also discussed during the Workshop, a resolution was adopted commending this excellent effort and urging the responsible authorities to greater support for this endeavour. In all, seven resolutions and recommendations were adopted.

As some of the key participants, including Drs. K. Flach, R. Arnold, A. van Wambeke and F. Beinroth, could not attend the Workshop due to unavoidable circumstances, a follow-up meeting was arranged in Athens, Greece. The purpose was to review the third Workshop and to plan for future activities. The meeting was hosted by Dr. T. Koutalos and his colleagues of the Soil Science Institute, Ministry of Agriculture, Greece. About fifteen participants attended this meeting. As the grant of the University of Puerto Rico from USAID was coming to an end and as the Soil Conservation Service of USDA has just launched its Soil Management Support Program which is also funded by USAID, future Workshops will be organised by USDA. Accordingly, it has been planned that the next Workshop will be in Africa in 1981 for the mandate of the International Committee on Oxisols<sup>(1)</sup>.

The proceedings of the third Soil Classification Workshop, including the papers of the participants who were not able to attend the Workshop itself, will be published by the end of the year. Further information may be obtained from:

Dr. F.H. Beinroth, Department of Agronomy, University of Puerto Rico, Mayaguez, Puerto Rico 00708, USA.

or: Dr. A. Osman, Director, Soils Division ACSAD, P.O. Box 2440, Damascus, Syrian Arab Republic.

H. Eswaran, Gent, Belgium and A. Osman, Damascus, Syria.

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(1) The Chairmen of the International Committees are as follows and they may be contacted for more information:

- |   |  |
|---|--|
| a. <i>Soils with low activity clays (ICOMLAC)</i><br>Dr. F. Moormann<br>Institute of Earth Sciences,<br>University of Utrecht<br>4, Budapestlaan, 3508 YA Utrecht,<br>The Netherlands | b. <i>Oxisols (ICOMOX)</i><br>Dr. H. Eswaran<br>Geological Institute<br>University of Ghent,<br>271, Krijgslaan, 9000 Ghent<br>Belgium |
| c. <i>Soil Moisture regimes (ICOMMORT)</i><br>Dr. A. van Wambeke<br>Department of Agronomy<br>Cornell University<br>Ithaca, New York, 14853<br>USA.                                   | d. <i>Andisols (ICOMAND)</i><br>Dr. M. Leamy<br>Director, Soils Division,<br>DSIR,<br>Private Bag, Lower Hutt,<br>New Zealand          |
| e. <i>Aridisols (ICOMID)</i><br>Dr. A. Osman<br>Director, Soils Division,<br>ACSAD<br>P.O. Box 2440, Damascus<br>Syrian Arab Republic   | f. <i>Vertisols (ICOMVERT)</i><br>Dr. R. Arnold (Acting)<br>Soil Conservation Service<br>USDA<br>Washington D.C.<br>USA                |

## Francis Hamilton Buchanan Honoured

Laterite, the scourge of many tropical soils, was first described by a Scottish doctor and naturalist, Dr. F. H. Buchanan, in 1800 at Angadipuram in the present day state of Kerala, India. On christening the material, he wrote: 'the most proper english name would be laterite from lateritis, the appellation that may be given it in science'. He describes it as 'It is diffused in immense masses, without any appearance of stratification and is placed over the granite that forms the basis of Malayala (present day Kerala). It is full of cavities and pores and contains a very large quantity of iron in the form of red and yellow ochres. In the mass, while excluded from the air, it is so soft that any iron instrument readily cuts it and is dug up in square masses with a pick axe and immediately cut into the shape wanted with a trowel or a large knife. It very soon becomes as hard as a brick and resists air and water much better than any bricks I have seen in India'.

The description of Buchanan still remains as one of the better definitions of laterite though the term has fallen in disrepute among the Pedologists. Further and regretfully, many modern classification systems do not consider it as being significant enough to be brought in at a high level in the classification.

In India, however, laterites are one of the major obstacles to agricultural development and the Geological Survey of India, at the occasion of the *International Seminar on Lateritisation Processes* held from the 11th to the 14th. December 1979, decided to honour Dr. Buchanan for being the first to identify the material. The Seminar was part of the International Geological Correlation Program (No. 129) of the IUGS and co-sponsored by Unesco. About sixty foreign and more than one hundred and fifty local scientists attended the Seminar and some participated in the excellent pre- and post-Seminar tours.

The glaring absence of Soil Scientists was a notable feature of the Seminar which consequently dwelled upon the geological aspects of laterite. It became blatantly clear that geologists were either unaware of or did not appreciate the pedological investigations on laterite. This lacuna between the two related sciences is highly regrettable and it seems necessary that the International Soil Science Society should take steps to try to bridge the gap.

The dedication to Dr. Buchanan took place on 18th. December 1979 at the type locality of laterite in Angadipuram, Kerala State, South India. The Geological Survey of India erected a monument made of laterite, quarried in the same area and cut in the same way as during the visit of Buchanan. The lower part of the monument was draped with the same kind of tartan belonging to the Buchanan clan. The monument is situated besides the rest house in Angadipuram and all visitors to India are invited to pay homage to this great naturalist and remind themselves of the kind of damage that can be brought about to the soil through bad management practises.

The proceedings of the Seminar will be published by the end of the year and may be obtained from:

Dr. V. Venkatesh, Director, Geological Survey of India, Doris, Southern Region, Hyderabad - 500 001, India.

The next Seminar is scheduled to be held in Brazil in 1981 and interested persons may contact:

Dr. A. J. Melfi, Instituto de Geociências, Universidade de Sao Paulo, CP 20899, Sao Paulo, Brazil.

H. Eswaran, Gent, Belgium



## The World Soil Map at FAO Headquarters



*On the occasion of the 20th FAO Conference in Rome, November 1979, the complete FAO-Unesco Soil Map of the World was composed. Here the exhibition is shown in the vestibule of Building A.*

## INTERNATIONAL TRAINING COURSES/COURS INTERNATIONALES DE FORMATION/INTERNATIONALE FORTBILDUNGSKURSE

Additional information to the list printed in Bulletin no. 56/*information supplémentaire de la liste imprimée dans le Bulletin no. 56*/ergänzende Nachrichten zum Verzeichnis abgedruckt im Mitteilungsblatt No. 56

### **International Irrigation Course, Bari, Italy.**

This 1-year course provides training in the field of planning, development and use of irrigation and drainage systems and methods, oriented to the Mediterranean area and developing countries. The courses are given in English and Italian.

*Information:* The Director, International Centre for Advanced Mediterranean Agronomic Studies (ICAMAS), Instituto di Bari, Str. Prov. Ceglie, Valenzano, Italy.

### **Course in Irrigation and Soil Management, Jerusalem, Israël.**

This 3-month post-graduate course focusses on the basic problems of water and soil properties, plant-soil-water relationship, irrigation technology, crop water requirements, salinity problems in irrigation and economic considerations in irrigation designs.

*Information:* Dr. K.M. Schallinger, Scientific Coordinator, The Volcani International Courses, P.O. Box 6, Bet Dagan, Israël.

### **Cours de Formation Spécialisée sur les Aménagements de Terrain, Le Havre, France.**

Cette cours de formation est désignée pour les étudiants qui désirent s'orienter vers les Sociétés de Développement intégré, les plantations, la mise en place d'opérations de terrain, les Instituts de Recherche appliquée et tout le secteur agro-commercial de l'irrigation. Il consiste en les études de microbiologie générale et microbiologie du sol, de géologie, de pédologie, de topographie et de hydrologie et irrigation.

*Information:* ISTOM, 4 Quai Guillaume le Testu, 76600 Le Havre, France.

### **Courses in Project Planning, Bradford, U.K.**

These 3-month courses are designed for overseas participants who have responsibility for the identification, preparation, appraisal and implementation of projects. The course programme includes: Planning and appraisal of rural development projects; Investment planning and appraisal for development banks and financial institutions; The planning and appraisal of agro-industrial projects.

*Information:* The Assistant Director Project, Planning Centre for Developing Countries, University of Bradford, Bradford, West Yorkshire DB7 1DP, U.K.

### **Courses in Soil and Water Conservation Practices, Ibadan, Nigeria.**

The principal objective of these short courses is to acquaint and familiarize researchers from agricultural research stations with the current state of knowledge of erosion problems, principles of erosion control and techniques in conducting experiments in erosion.

*Information:* The Assistant Director, Training Programme, International Institute of Tropical Agriculture (IITA), PMB 5320, Ibadan, Nigeria.

### **3rd FAO/SIDA Training Course on Tropical Pastures and Range Management for East, Central, Southern and West African Countries, Morogoro/Arusha, Tanzania, January 12–February 20, 1981.**

*Information:* Chief, Conference Programming Section, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy.

### **M.Sc. Course in Arid Land Studies, Lubbock, Texas, U.S.A.**

The course provides training in land use planning in arid regions, environmental studies and social and cultural aspects of various fields dealing with arid lands. The programme gives broad-based interdisciplinary courses and specialization on sciences or engineering of arid lands or social sciences and humanities of arid lands.

*Information:* Dr. I. R. Taylor, International Center for Arid and Semi-arid Land Studies, Texas Technical University, Lubbock, Texas 79409, U.S.A.

### **Remote Sensing For Land Use Inventories, Ispra, Italy, September 1–20, 1980.**

The work of this summer school will be designed to enable those with some knowledge of remote sensing, and its general applications to receive a training in advanced methods and techniques of data collection and manipulation in the context of land use inventories.

*Information:* Secretariat 'ISPRA-Courses', Centro Commune di Ricerca, I-21020 Ispra (Varese), Italy.

### **Advanced Training of Foreign Participants in Remote Sensing, Flagstaff, Arizona, U.S.A.**

The U.S. Geological Survey and Northern Arizona University in Flagstaff, Arizona, are conducting an advanced training program for foreign participants in remote sensing and digital image processing for the earth sciences. Three different courses are offered: geologic interpretation (June 2–July 3, 1981), land use planning and environmental applications (October 5–November 6, 1981), and digital image processing (February 8–March 5, 1982). Emphasis is placed on digital image processing for geologic interpretation, and on the geological aspects of land use planning and environmental applications.

*Information:* Chief, Office of International Geology, U.S. Geological Survey, 917 National Center, Reston, VA 22092, U.S.A.

## **RECTIFICATION**

### **Postgraduate Courses in Soil Science, University of Reading, Department of Soil Science, U.K. Courses start about 1st October.**

#### **1. M.Sc. Course in Soil Chemistry**

Programme: A 1-year course intended primarily for graduates in science or applied science, covering the chemistry of soil constituents, soil processes and plant nutrition, and including extensive practical work in soil sampling and analysis, and in various aspects of soil fertility.

#### **2. M.Sc. Course in Pedology and Soil Survey**

Programme: A 1-year course based on the principles of pedology, with special emphasis on soil genesis, and the conduct of soil surveys, and including case studies from a wide range of countries and environments.

#### **3. M.Agr.Sc. Course in Soil Science**

Programme: A 2-year course intended primarily for graduates in agricultural science who have not previously specialised in soil science, and covering pedology, soil chemistry and physics, soil biology, and the principles of crop production and soil management.

*Information:* The Secretary, Department of Soil Science, University of Reading, London Road, Reading, Berkshire RG1 5AQ, U.K.

**MEETINGS, CONFERENCES, SYMPOSIA  
REUNIONS, CONFERENCES, SYMPOSIUMS  
TAGUNGEN, KONFERENZEN, SYMPOSIEN**

Meetings etc., marked with\*, are organized or sponsored by the ISSS/*Réunions etc., indiquées avec\**, *sont organisées ou favorisées par l'AISS/Tagungen usw., angezeigt mit\**, werden organisiert oder unterstützt von der IBG.

**1980**

**2nd World Congress for Rural Sociology: Agrarian problems, peasants and development**, Mexico City, Mexico, 7–12 August 1980.

*Information:* R. Stavenhagen, El Colegio de Mexico, Apds., 20-671 Mexico 20, D.F. Mexico, Mexico.

**Seminar on Isotope Techniques in Studies of the Useful Conservation and the Pollutant Potential of Agricultural Nitrogen Residues**, Vienna, Austria, 25–29 August 1980.

*Information:* IAEA, P.O. Box 100, A-1400 Vienna, Austria.

**International Congress on Dryland Farming**, Adelaide, Australia, 25 August–5 September 1980.

*Information:* The Secretariat, International Congress on Dryland Farming, G.P.O. Box 2433, Adelaide, S.A. 5001, Australia.

**International Conference on Biological Agriculture**, Ashford, U.K., 26–30 August 1980.

*Information:* Dr. R.D. Hodges, Wye College, Wye Ashford, Kent TN25 5AH, U.K.

**6th International Conference on the Global Impacts of Applied Microbiology**, Lagos, Nigeria, 31 August–6 September 1980.

*Information:* Prof. O. Ogumbi, Chairman GIAM VI Organizing Committee, Department of Microbiology and Parasitology, Lagos University Teaching Hospital, P.M. Bag 12003, Lagos, Nigeria.

**24th International Geographical Congress**, Tokyo, Japan, 1–5 September 1980.

*Information:* International Geographic Union, Geographisches Institut, Universität Freiburg, 78 Freiburg, Federal Republic of Germany.

\* **Second International Symposium on Microbial Ecology**, Warwick, U.K., 7–12 September 1980. (ISSS Commission III).

*Information:* Dr. M.A. Fletcher, Dept. of Environmental Sciences, University of Warwick, Coventry CV4 7AL, U.K.

**Fourth European Clay Conference**, Munich, Federal Republic of Germany, 8–10 September 1980 (Participation of ISSS Commission VII).

*Information:* Dr. U. Schwertmann, Institut für Bodenkunde, 8050 Freising-Weihenstephan, Federal Republic of Germany.

**International Symposium on Inland Waters and Lake Restoration**, Portland, Maine, U.S.A., 8–12 September 1980.

*Information:* Dr. A.N. Clarke, P.O. Box 40284, Nashville, Tennessee 37204, U.S.A.

**Symposium on Management of Clay Soils in the Tropics**, Trinidad, West Indies, 14–23 September 1980.

*Information:* Dr. F. Gumbs, Department of Soil Science, U.W.I., St. Augustine, Trinidad.

**Conference on Agricultural Engineering**, Geelong, Australia, 30 September–2 October 1980.

*Information:* The Conference Manager, Conference on Agricultural Engineering 1980, The Institution of Engineers, Australia, 11 National Circuit, Barton A.C.T., 2600 Australia.

\* **International Symposium on Land Evaluation for Forestry Purposes**, Wageningen, The Netherlands, 10–14 November 1980.

*Information:* Dr. K.J. Beek, ILRI, P.O. Box 45, Wageningen, The Netherlands.

**Symposium on Paddy Soils: Properties, Classification and Management**, Nanjing, People's Republic of China, 19–24 October 1980.

*Information:* Prof. Ching-kwei-Li, Nanking Institute of Soil Science, Academia Sinica, P.O. Box 821, Nanking, People's Republic of China.

**National Irrigation Workshop**, Lincoln, Nebraska, U.S.A. 20–23 October 1980.

*Information:* P.E. Fischbach, University of Nebraska, Lincoln, Nebraska 68583, U.S.A.

**First OAU Inter-African Soil Science Congress**, Accra/Kumasi, Ghana 5–10 November 1980.

*Information:* Dr. H. Obeng, Soil Research Institute, Academy Post Office, Kwadoso-Kumasi, Ghana.

**First International Conference on Technology for Development**, Canberra, Australia, 24–28 November 1980.

*Information:* The Conference Manager, First International Conference on Technology for Development, The Institution of Engineers, Australia, 11 National Circuit, Barton A.C.T., 2600 Australia.

## 1981

**Second International Symposium on Acid Sulphate Soils**, Bangkok, Thailand, 12–17 January 1981.

*Information:* S. Panichapongs, Secretary Second International Symposium on Acid Sulphate Soils, Department of Land Development, Bangkok, Bangkok 9, Thailand.

**International Symposium on Erosion and Sediment Transport in Pacific Rim Steeplands**, Canterbury, New Zealand 25–31 January 1981.

*Information:* 1981 Symposium, P.O. Box 737, Christchurch, New Zealand.

**South-East Asian Regional Symposium on Problems of Soil Erosion and Sedimentation**, Bangkok, Thailand, 27–29 January 1981.

*Information:* Organizing Secretary PSES-Symposium, Asian Institute of Technology, P.O. Box 2754, Bangkok, Thailand.



- \* **Soils With Variable Charge**, joint meeting of Commissions IV, V and VI of the ISSS, Massey University, Palmerston North, New Zealand, 11–18 February 1981. Under the auspices of the N.Z. Society of Soil Science and the Royal Society of N.Z.

*Information:* Secretary-General, Soils with Variable Charge Meeting, Soils Bureau, DSIR, Private Bag, Lower Hutt, New Zealand.

**Fourth Canadian Permafrost Conference**, Calgary, Alberta, Canada, 2–6 March 1981.

*Information:* Mrs. M.L. Baiguée, Conference Services Office, Building M-58, National Research Council of Canada, Ottawa, Ontario, Canada K1A 0R6.

- \* **International Conference on Aridic Soils: Properties, Genesis and Management**, Jerusalem, Israel, 29 March–4 April (ISSS Commissions V and VI and Working Group DS).

*Information:* Dr. D.H. Yaalon, Department of Geology, The Hebrew University of Jerusalem, Jerusalem 91000, Israel or Secretariat, P.O. Box 3054, 122 Hayarkon Street, Tel Aviv, Israel.

**Session on International Groundwater Development**, New York City, U.S.A. 6–10 April 1981.

*Information:* A.I. Johnson, Woodward-Clyde Consultants, 2909 West 7th Avenue, Denver, Colorado 80204, U.S.A.

**Perspectives in Landscape Ecology**, Eindhoven, The Netherlands, 6–11 April 1981.

*Information:* Ms. W.J.M. van Giersbergen, Congress Bureau of the Information Dept. TNO, Juliana van Stolberglaan 148, 2595 CL The Hague, The Netherlands.

**Symposium on Multidisciplinary Studies on Hudson/James Bay**, Guelph, Ontario, Canada, 28–30 April 1981.

*Information:* Prof. I.P. Martini, Department of Land Resource Science, Ontario Agricultural College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.

- \* **Workshop on Methodology for Spectral Analyses of Soils**, Warsaw, Poland, 4–8 May 1981 (ISSS Working Group RS, in cooperation with Polytechnical Institute of Warsaw).

*Information:* Dr. M.S. Bialousz, U1, Belska, 24 M 24, 02.638 Warsaw, Poland.

**Golden Jubilee Int. Symposium on Copper in Soils and Plants**, 7–9 May 1981, Perth, Australia.

*Information:* J. F. Loneragan, Murdoch University, Perth, W. A. 6153, Australia.

**Fifth International Symposium on Environmental Biogeochemistry**, Stockholm, Sweden, 1–5 June 1981.

*Information:* R.O. Hallberg, Department of Geology, University of Stockholm, Box 6801, S-11386 Stockholm, Sweden.

- \* **Colloque International 'Humus et Azote'**, Reims, France, 7–11 juillet 1981.

*Information:* Dr. Dutil, INRA, Station de Sciences du Sol, route de Montmirail, 5100 Chalons sur Marne, France.

**5th Research Conference of the International Turfgrass Society**, Guelph, Canada, 20–22 July 1981.

*Information:* Prof. Dr. C.M. Switzer, President, Ontario Agricultural College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.



**11th International Congress on Irrigation and Drainage**, Grenoble, France, August/September 1981.

*Information:* ICID, 48 Nyaya Marg, Chanakyapuri, New Delhi-110021, India.

**International Conference on Phosphorus and Potassium in the Tropics**, 17–19 August 1981, Kuala Lumpur, Malaysia.

*Information:* Chairman, Conference Phospotrops, Malaysian Society of Soil Science, P.O. Box 2644, Kuala Lumpur, Malaysia.

**5th International Conference on Soil Science**, 19–23 August 1981, Prague, Czechoslovakia.

*Information:* Dr. Ing. Z. Facek CSc., Chairman, Organising Committee, Res. Inst., for Crop Production, Division of Soils, 161 06 Prague 6 – Ruzyně, Czechoslovakia.

**12th Congress and General Assembly of the International Union of Crystallography**, Ottawa, Canada, 16–25 August 1981.

*Information:* Mr. K. Charbonneau, Executive Secretary 12th I.U.Cr. Congress, National Research Council of Canada, Ottawa, Ontario, Canada K1A 0R6.

\* **International Working Meeting on Soil Micromorphology**, London, U.K., 17–21 August 1981 (ISSS Subcommittee B).

*Information:* Dr. P. Bullock, Rothamsted Exp. St., Harpenden, Herts. AL5 27Q, U.K.

**7th International Clay Conference**, Bologna/Pavia, Italy, 6–12 September 1981.

*Information:* Prof. F. Veniale, Chairman Organizing Committee 7th International Clay Conference, c/o Istituto Mineralogia Petrografia, Università, Via Bassi 4, 27100 Pavia, Italy.

\* **International Symposium on Soil Problems in Urban Areas**, West-Berlin, G.F.R., 7–9 September 1981.

*Information:* Prof. Dr. E. Schlichting, PF 106 (05100), D-7000 Stuttgart 70, B.R.D.

\* **International Colloquium on Earthworm Ecology**, Merlewood, U.K., September 1981.

*Information:* Dr. J.E. Satchell, Institute of Terrestrial Ecology, Merlewood Research Station, Grange-over-Sands, Cumbria LA11 6JU, U.K.

\* **Workshop on Soil Data Processing**, France (ISSS Working Group DP).

*Information:* Dr. J. Schelling, Netherlands Soil Survey Institute, P.O. Box 98, Wageningen, The Netherlands.

## 1982

\* **12th International Congress of Soil Science: Managing Soil Resources to Meet Challenge of Mankind**, New Delhi, India, 8–16 February 1982.

*Information:* Dr. T.D. Biswas, Organizing Secretary 12th International Congress of Soil Science, Division of Soil Science & Agricultural Chemistry, Indian Agricultural Research Institute, New Delhi-110012, India.

**Symposium on Hydraulic Applications of Remote Sensing and Remote Data Transmission**, Exeter, U.K., 19-30 July 1982.

*Information:* A.I. Johnson, Woodward-Clyde Consultants, 2909 West 7th Avenue, Denver, Colorado 80204, U.S.A.

**11th INQUA Congress**, Moscow, USSR, August 1982.

**9th International Colloquium of Plant Nutrition**, Warwick, U.K., 22-28 August 1982.

*Information:* Dr. M.A. Scaife, NVRS, Wellesbourne, Warwick CV35 9EF, U.K.

**12th Congress of the International Association of Sedimentologists**, Hamilton, Ontario, Canada, September 1982.

**4th International Congress of the International Association of Engineering Geology**, New Delhi, India, 1-6 December 1982.

*Information:* Mr. Srivastava K.N., 47-48, Pragati House, Nehru Place, New Delhi-110019, India.

**9th Conference of the International Soil Tillage Research Organization (ISTRO)**, Osijek, Yugoslavia.

*Information:* Prof. V. Mihalić, University of Zagreb, Faculty of Agriculture, Šimunska cesta 25, 41000 Zagreb, Yugoslavia.

**1983**

\* **Meeting on the Interaction of Roots and Micro-organisms and the Cycling of Nitrogen**, England (ISSS Commissions III and VI).

*Information:* British Society of Soil Science, University of Nottingham, School of Agriculture, Sutton Bonington, Loughborough, Leics LE12 5RD, U.K.

**1984**

**12th International Congress on Irrigation and Drainage**, Fort Collins, Denver, Colorado, U.S.A.

*Information:* Secr. ICID, 48 Nyaya Marg, Chanakyapuri, New Delhi-110012, India.

**NEW PUBLICATIONS\***  
**NOUVELLES PUBLICATIONS\***  
**NEUE VERÖFFENTLICHUNGEN\***

**The Encyclopedia of Soil Science, Part 1, Physics, Chemistry, Biology, Fertility, and Technology.** R. Q. Fairbridge and C. W. Finkl, Jr., editors. Dowden, Hutchinson & Ross, Stroudsburg, 1979, 646 p. ISBN 0-87933-176-3.

This is the first part of the Encyclopedia of Soil Science, volume 12 of the Encyclopedia of Earth Sciences Series. Brought together for the first time in a single, comprehensive reference work are salient aspects of the soil sciences, encompassing soil physics, chemistry, biology, fertility, and technology (ISSS Commissions I, II, III, IV, VI, and VII).

Part 2, which will be published at a later date, will deal with soil morphology, genesis, classification, and geography (Commission V).

It should be emphasized that this book, with nearly 150 major entries, is not a dictionary but rather a compendium of knowledge. The topics discussed are thoroughly cross-referenced and are followed by extensive international bibliographies. The book contains many illustrations, tables and graphs and a large index. It is a work of great value to all soil scientists, agronomists as well as to students in these areas and it certainly belongs in academic libraries, research institution, and agricultural departments.

*Price:* \$ 59.50.

*Orders to:* Academic Press, 111 Fifth Avenue, New York, NY 10003, U.S.A., or Academic Press, 24/28 Oval Road, London NW1 7DX, England.

**Farmland, Food and the Future.** M. Schnepf, editor. Soil Conservation Society of America, Ankeny, 1979. 214 p. ISBN 0-935734-03-1.

How much farmland is being converted to non-farm uses? How does the land conversion process work? Does the loss of farmland threaten the ability of the United States to meet domestic and world needs for food and fiber? What is government at the local, state, and federal levels doing about current trends in agricultural land use?

This publication reviews, in depth, the agricultural land retention issue, an issue that has taken on national and international importance in the past year. More and more people are expressing concern about the capability of U.S. agriculture to meet growing domestic and foreign demands for food and fiber, particularly if the United States must continue to 'mine' its wealth of soil resources.

The contributors to this book stand in the forefront of research and policy-making in this quickly growing field of agricultural policy. They offer stimulating ideas necessary for a complete discussion of the issue. The book is a must for anyone concerned about the future of American agriculture and the proper use of land and water resources.

*Price:* outside U.S. \$ 8.50 postpaid; prepayment required.

*Orders to:* Soil Conservation Society of America, 7515 N. E. Ankeny Road, Ankeny, Iowa 50021, U.S.A.

**Soil Conservation Policies: An Assessment.** Soil Conservation Society of America, Ankeny, 1979, 154 p. ISBN 0-935734-04-X.

Increasing public attention is being paid to soil erosion problems in the United States. Questions are being asked about the effectiveness of existing programs. Since the Dust Bowl years of the 1930s, many policies have been written and myriad institutions created to protect soil productivity and enhance environmental quality. But more topsoil is now lost from agricultural land than was lost during the worst of the Dust Bowl years. In many parts of the country the annual rates of soil loss exceed the limits necessary to maintain soil fertility by two or three times.

This booklet examines in a comprehensive manner the current state of soil conservation affairs. The book does so by reviewing history of soil conservation efforts, by evaluating how effective existing soil conservation programs are and by suggesting possible strategies for shaping more effective soil conservation policies and programs in the future.

The authors of the book's 20 chapters present a crosssection of current thinking about soil conservation efforts at the federal, state and local levels of government as well as in the private sector - timely ideas on a timely issue.

*Price:* outside U.S. \$ 7.00 postpaid; prepayment required.

*Orders to:* see above.

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\*Les titres de nouvelles publications sont mentionnés à titre d'information. Le Secrétariat de l'AISS ne peut toutefois pas se charger de commandes, celles-ci devant être adressées à une librairie ou directement aux éditeurs.

\*Die Titel Veröffentlichungen sind hier zur Information angeführt. Bitte richten Sie Ihre Bestellungen nicht an das IBG Sekretariat sondern an den Buchhandel oder direkt an die Verlage.

**Chemical Equilibria in Soils.** W. L. Lindsay, J. Wiley & Sons, New York and Chichester, 1979, 449 p. ISBN 0-471-02704-9.

This is the first comprehensive application of the principles of chemical equilibrium to the solubility relationships in soils and related environments. By utilizing and organizing chemical information already available in the literature, it shows how soils behave basically as chemical systems, and how the dissolution and precipitation of minerals and solubility relationships can be largely predicted and explained from a chemical basis.

Theoretical aspects are based on an exhaustive selection of over 800 standard free energies of formation of mineral, solution, and gaseous species that are important in soils; these values are fully documented in the appendix and were used to calculate the equilibrium constants of over 1000 chemical reactions. Problems at the end of each of the 23 chapters aid in developing the skills necessary for understanding the material and for using solubility relations with ease. Plus, over 135 graphs and line drawings depict important solubility relationships and show how they can be used effectively.

In handling redox relationships in soils, the text uses  $pe + pH$  as a redox parameter, thus providing a valuable unifying concept. Electron titrations show redox buffering relationships of various reducible minerals present in soils. The chemical basis for mineral weathering, carbonate equilibria, solubility relationships, precipitation of sulfides, metal chelation, denitrification, and other important processes are clearly depicted.

Price: £ 15.25 or \$ 33.25.

Orders to: J. Wiley & Sons, Baffins Lane, Chichester, Sussex P019 1UD, England; or 605 Third Avenue, New York, NY 10016, U.S.A.

**Geochemical Processes. Water and Sediment Environments.** A. Lerman. John Wiley, New York and Chichester, 1979, 481 p. ISBN 0-471-03263-8.

The approach of this book to geochemistry can be summarized in the question: 'What happens, and how, and how fast does it happen, when waters, solids, and gases interact in the earth's surface environment?' The environment of the earth's surface is made of solids and fluids, and the interactions among them are responsible for much of what is taking place in the physical world around us. The dissolved load of natural waters and the materials of which sediments are made are the products of reactions taking place practically everywhere on land, in the atmosphere, and in the hydrosphere. Thus the term *water and sediment environments* applies effectively to much of the surface environment of the earth, including the zone of up to a few kilometers above and below the land and ocean surface. Evolution of the environment, driven either by nature or man, or both, usually presents itself to us as a more or less complex variety of processes – geological, physical, chemical, and biological. To this end, the inclusive title *Geochemical Processes* was chosen for the book, to introduce a text that emphasizes processes and time-dependent phenomena.

Price: \$ 43.85 or £ 20.90.

Orders to: see above.

**Soil Chemistry.** H. L. Bohn, B. L. McNeal and G. A. O'Connor. J. Wiley & Sons, New York and Chichester, 1979, 329 p. ISBN 0-471-04082-7.

This book examines inorganic soil chemical processes – including weathering, cation exchange, anion and molecular retention, and oxidation-reduction. These processes, after an initial introduction and analysis, are applied to so-called 'problem' soils – including acid soils, salt-affected soils, and submerged soils, as well as to the issues of localized and global nutrient availability and cycling.

The introductory chapter discusses the relationship of soil to living organisms, the hydrosphere, and the atmosphere. Next, a review of pertinent solution chemistry is provided, with appendixes on thermodynamics and kinetics. The third chapter introduces the structure, composition, and properties of crystalline and amorphous soil solids. Chapters 4 through 9 cover the processes and problem soils mentioned above. The final chapter discusses the behavior of important groups of chemical elements as well as individual elements.

Special features of Soil Chemistry include the overview of chemistry provided in Chapter 2, the organization of elements into broad behavioral groups, and the treatment of the relation of soil chemistry to the composition of ground and surface waters.

This comprehensive text is a careful introduction to the subject for those needing a thorough grounding in soil chemistry.

Price: £ 12.50 or \$ 26.50.

Orders to: see above.

**Introduction to Forest Biology.** H. W. Hocker Jr. John Wiley, New York and Chichester, 1979, 467 p. ISBN 0-471-01978-X.

This publication provides a background for silviculture and at the same time serves as a foundation for students who plan advanced study. Chapters included are: forest trees, forest stands, the forest site, and forest biotic populations and influences.

Although primarily written for students in North America, most of the text is also applicable in other regions of the world.

Price: £ 11.25.

Orders to: see above.

**Proceedings First International Soil Classification Workshop**, Brazil, 1977, M. N. Camargo and F. H. Beinroth, editors. Embrapa, Rio de Janeiro, 1978, 376 p.

This publication contains the papers presented at the workshop, which was a joint effort of the International Committee on the Classification of Alfisols and Ultisols with Low Activity Clays (ICOMLAC) and the Consortium on Soils of the Tropics, University of Puerto Rico, as well as the profile and site descriptions, analytical data and summary of discussions on the 31 soils studied during the tour.

The soils, which are important and widespread in many tropical regions, are fully analysed and described. This should make the publication useful for international soil correlation work and for general reference.

The objectives of the meeting were: to examine the adequacy of Soil Taxonomy with respect to tropical soils; to propose pertinent changes in Soil Taxonomy; to finalize new definitions for certain taxa of Alfisols and Ultisols; and to study critical examples of these soils in the field. A limited number of copies are available free of charge.

*Orders to:* Dr. F. H. Beinroth, Dept. of Agronomy and Soils, University of Puerto Rico, Mayaguez, PR 00708, U.S.A., or to

Dr. M. Camargo, Embrapa, Serviço Nacional de Levantamento e Conservação de Solos, Rua Jardim Botânico 1024, 22460, Rio de Janeiro, RJ, Brazil.

**Soil Resource Inventories and Development Planning**. Agronomy Mimeo No. 79-23, Cornell University, Ithaca, 1979, 332 p.

This publication contains the proceedings of a workshop held at Cornell University in December 1978. Soil resource inventories are important inputs into the planning process. Soil scientists have a responsibility to produce inventories which are relevant and helpful to decision-makers in determining the strategies for agricultural development. This requires more direct and more effective communications between soil scientists and planners. The aim of the workshop was to initiate such a dialogue. Planners and soil scientists both participated in the workshop.

The Proceedings cover different aspects of the interactions between planners and soil scientists. They include a synopsis of the objectives of the study by the Cornell Soil Resource Inventory group. The 22 papers were held in the following sessions: an overview of past soil resource inventory activities; soil resource inventory methodology; uses and adequacy of soil resource inventory information; nature of soil resource information needed by planners; presentation of soil resource inventory information to planners; soil resource inventory quality control; improving the dialogue between planners and technicians. After a section on the discussions, an appendix contains a review of the special considerations in evaluating soil resource information of paddy lands.

Only a limited number of copies is available.

*Price:* \$ 2.00.

*Orders to:* Publications Mailing Room Research Park, Building 7, Cornell University, Ithaca, NY 14853, U.S.A.

**Potassium dynamics in the soil**. 15 colour slides with explanations. International Potash Institute, Worblaufen-Bern.

Soil analysis is an important tool when evaluating soil nutrient status. The results of soil tests are frequently taken as a basis for fertilizer recommendations. This is justified in such cases where a correlation exists between soil test results and crop response to fertilizer application. As a rule, the effect of a fertilizer nutrient should be the lower the higher its content in the soil.

As to potassium, however, many cases known in which no correlation has been found between soil test data and yield response to potash application.

In extreme cases, even negative correlations may exist between exchangeable K and yield, while the correlation between the K concentration of the soil solution and the yield is positive and highly significant.

The scientific background of these phenomena and practical consequences for soil test interpretation and fertilizer application are the subject of this set of 15 slides on potassium dynamics in the soil.

The folder of the slides contains an introduction to the subject, and the legend to the slides.

*Price:* Sw. Fr. 24,- plus mailing charges.

*Orders to:* International Potash Institute, P.O. Box 41, CH-3048 Worblaufen-Bern, Switzerland.

**An Introductory Soils Laboratory Handbook**. O. C. Butler. Exposition Press, Hicksville, 1979, 108 p. ISBN 0-682-49169-1.

This manual is designed for use in basic courses in soils studies assuming no prerequisites. The first nine exercises introduce the fundamental principles of soil science, while the final seven are concerned with classification (Soil Taxonomy), conservation and the geographic distribution of the soils.

The direct use of this manual by students outside North America is probably limited, but it may serve teachers.

*Price:* \$ 8.00.

*Orders to:* Exposition Press, 900 South Oyster Bay Road, Hicksville, NY 11801, U.S.A.

**Géomorphologie applicable.** J. Tricart. Masson, Paris, 1978, 204 p. ISBN 2-225-71390-1

This book, written by Professor Tricart, Director of the 'Centre de Géographie Appliquée', University of Strasbourg, France, deals with the various applications of geomorphology. It is a comprehensive treatise on the role of geomorphology in geology, soil science, hydrology, etc. Many examples are discussed, in particular from work carried out by the author in French speaking Africa and South America.

The place of geomorphology in different approaches of mapping is treated and critically reviewed. Much emphasis is laid on the system of geomorphological mapping developed by or in collaboration with the Centre in Strasbourg. Six map fragments show examples of this approach. Several case studies illustrate the role of geomorphology in soil science, in particular in relation to landscape development.

The book is especially useful and illuminating for agronomists, soil scientists and civil engineers.

*Price:*

*Orders to:* Masson, 120 Boulevard Saint-Germain, 75280 Paris, Cédex 06, France.

R. F. van de Weg, Amsterdam.

**Hydrology of Areas of Low Precipitation.** Symposium proceedings. IAHS Publication No. 128. Int. Ass. of Hydrological Sciences, 1980, 502 p.

This publication contains the proceedings of an international symposium held in Canberra in December 1979. It was sponsored by the International Association of Hydrological Sciences (IAHS) and the Australian National Committee for Hydrology.

The proceedings contain 50 technical papers by specialists from 17 countries. The scope of the volume is very broad, covering state of art, theory, laboratory and field research, and practical case histories on the following broad subjects: (1) Streamflow characteristics with special reference to low and high flows; (2) Quantitative and qualitative aspects of the relationship between surface water and subsurface water; and (3) Effect on sediment production of land use and management.

*Price:* \$ 60.00

*Orders to:* W. W. Hastings, Treasurer, International Association of Hydrological Sciences, 2000 Florida Avenue, N.W., Washington, D.C. 20009, U.S.A.

**Tall Fescue.** R. C. Buckner and L. P. Bush, editors. Published by the ASA, CSSA and SSSA, Madison, 1979, 351 p. ISBN 0-89118-057-5.

Tall fescue (*Festuca arundinacea* Schreb.) is a valuable grass of temperate agriculture.

At a time when soil erosion is a major concern, tall fescue has become important as a productive and nutritious forage crop which stabilizes our soils for agricultural and recreational uses. Now the results from extensive research on this grass, originally reported in various publications, are gathered together in this single monograph, the 20th in 'Agronomy', a series of monographs. It covers the origin, history, morphology, taxonomy, cytology, genetics, and breeding of tall fescue along with its management and utilization for forage, turf, and conservation purposes. It provides up-to-date, authoritative and requisite information to the scientist and specialist on technology of management and production in addition to basic information regarding the physiology, cytogenetics, and breeding of the species.

*Price:* \$ 18.75 (members of ASA, CSSA and SSSA first copy \$ 15.00). Advance payment and 50 cents per book for postage required on all orders outside the U.S.A.

*Orders to:* American Society of Agronomy, 677 South Segoe road, Madison, WI 53711, U.S.A.

**Universal Soil Loss Equation: Past, Present, and Future.** A. E. Peterson and J. B. Swan, editors. SSSA Special Publication Number 8. Soil Science Society of America, Madison, 1979, 54 p. ISBN 0-89118-766-9.

This publication contains the proceedings of a symposium sponsored by Division S-6 of the Soil Science Society of America. The papers-presented during the annual meetings in Los Angeles, California, 13-18 November 1977 - review the process of the development of the Universal Soil Loss Equation (USLE), discussing the current usage and limitations of the USLE, establishing the probable direction of future development of USLE related models, and indicating additional information needs of such models. The book presents the facts, underlying principles, and interpretations applicable to the processes and control of soil erosion.

*Price:* \$ 3.75 (members of ASA, CSSA, SSSA first copy \$ 3.00). Advance payment and 50 cents per book for postage required on all orders outside the U.S.A.

*Orders to:* American Society of Agronomy, 677 South Segoe Road, Madison WI 53711, U.S.A.

**Potassium Research - Review and Trends.** International Potash Institute, Worblaufen-Bern, 1978, 499 p.

This publication includes the Proceedings of the 11th Congress of the International Potash Institute - coinciding with the 25th anniversary of the Scientific Board of the IPI - held in September 1978.

It contains 23 contributions on the IPI: potassium in the soil/plant root system; the role of potassium in yield information; potassium requirements of crops; potassium fertilization in agricultural practice; and translation of research into practice. The world fertilizer scene shows that there is an estimated world reserve of potash of 50,000 million tonnes of  $K_2O$ . The production in 1977 was about 26 million tonnes.

*Price:* Sw. Frs. 30.- plus mailing charges.

*Orders to:* International Potash Institute, P.O. Box 41, CH-3048 Worblaufen-Bern, Switzerland.



**Nature and Origin of Carbohydrates in Soils.** M. V. Cheshire. Academic Press, London and New York, 1979, 216 p. ISBN 0-12-171250-8.

The presence of carbohydrates in soil has been recognized for almost a century but detailed analysis has only been possible in the last thirty years with the advent of suitable techniques. While much of the carbohydrate has been found to be polysaccharide, the exact form in which it occurs in nature is as yet uncertain. This is partly because of chemical bonding and associations with other non-carbohydrate organic matter and some of the mineral components in the soil, which make isolation and identification difficult.

This volume examines the methods which have been devised to overcome these unique problems of isolating, purifying and characterizing such compounds. A number of recommended procedures are given in detail and the physical and chemical properties of the isolated polysaccharides, including structure studies, are described.

This account of soil carbohydrates is not restricted to their chemistry but includes discussion of the effects of climate, various agricultural practices, the decomposition of microbial and plant remains and the synthesis of new carbohydrate. Although primarily a reference work for soil scientists, agronomists and workers in related subjects, it is hoped that this book will provide a stimulus to further research on this vital area of soil fertility.

*Price:* \$ 36.50.

*Orders to:* Academic Press, 24-28 Oval Road, London NW1 7DX, England; or 111 Fifth Avenue, New York, NY 10003, U.S.A.

**Planning the Uses and Management of Land.** M. T. Beatty, G. W. Petersen and L. D. Swindale, editors. Published by the ASA, CSSA and SSSA, Madison, 1979, 1056 p. ISBN 0-89118-058-3.

This book is the 21st publication in the well-known 'Agronomy' series of monographs. It covers information on several of the data bases for land resources and gives overviews of major land use planning principles, problems, and processes. The book is organized into 10 sections and 40 chapters. Sections include: Present status of land uses and land use planning; Data bases; Planning cultivated land uses; Planning rangeland uses; Planning forest and woodland uses; Planning metropolitan land uses; Planning for transportation systems and utility corridors; Planning for waste disposal and utilization on land; Planning diverse land uses and management programs; Integrated land use planning and plan implementation.

This publication provides a wealth of recent, up-to-date scientific and practical information on all aspects of land and its use and management. The monograph is intended for use by planners, engineers, agronomists, government personnel, economic and resource scientists, and as a reference or text for students.

The price is comparatively low.

*Price:* \$ 30.00 (members of ASA, CSSA, SSSA first copy \$ 25.00).

Advance payment and 50 cents per book for postage required on all orders outside the U.S.A.

*Orders to:* American Society of Agronomy, 677 South Segoe Road, Madison, WI 53711, U.S.A.

**Cobalt in Biology and Biochemistry.** R. S. Young. Academic Press, London and New York, 1979, 147 p. ISBN 0-12-772750-7.

Cobalt is in a unique position amongst the rarer heavy metals found in biological systems. It plays an essential role in ruminant nutrition, functions as a key element in Vitamin B<sub>12</sub> and there is extensive evidence of the beneficial effects of small quantities of this metal on growth and development in many plants, animals and microorganisms. Despite this, information on cobalt in biology and biochemistry has not, until now, been collected together in book form. This book takes the form of a review of the literature of cobalt and a reference manual that will enable researchers to benefit from an insight into the techniques employed and data obtained by others working in different areas of science. The cobalt of fertilizers, waters and plants, cobalt in human and animal nutrition and the effects of cobalt on enzymes and microorganisms are the subjects of just some of the chapters. A lengthy chapter on soil reviews the total and available cobalt in various soils throughout the world and the relationship between the cobalt content of soils and ruminant health. The text is well documented with over a thousand references.

*Price:* \$ 25.00.

*Orders to:* Academic Press, 24-28 Oval Road, London NW1 7DX, England; or 11 Fifth Avenue, New York, NY 10003, U.S.A.

**Fertilizer Use and Production of Carbohydrates and Lipids.** International Potash Institute, Worblaufen-Bern, 1977, 356 p.

This book includes the papers presented at the 13th Colloquium of the IPI, held in 1977.

The purpose of this colloquium was to relate fertilizer use to the production of carbohydrate and lipids, and to indicate the needs for future research. In all 31 contributions were given in the following sessions: biochemical and physiological aspects of the production of carbohydrates used as food for man and animals; prospects for improvement; the needs of humans and animals for carbohydrates and lipids; effects of fertilizers on the production of carbohydrates; effects of fertilizers on the production of lipids; and a general discussion.

*Price:* Sw. Frs. 34.- plus mailing charges.

*Orders to:* International Potash Institute, P.O. Box 41, CH-3048, Worblaufen-Bern, Switzerland.

**Gradient Modeling, Resource and Fire Management.** S. R. Kessell. Springer Series on Environmental Management, Volume 1. Springer Verlag, Berlin and New York, 1979, 432 p.

Gradient modeling is a new, important book for developing resource information systems. It draws from the methods and philosophies of numerous disciplines to integrate gradient analysis vegetation models with site inventories and computer science techniques.

In this book the author explains the detailed, step by step development of gradient modeling systems. They are illustrated by examples of their successful implementation in the Southern California chaparral ecosystem and Glacier National Park in Montana.

The book is intended primarily for those considering the development of similar models for their own resource management problems. It is also aimed at advanced students and field practitioners, showing how resource information is gathered, compiled, ordered, stored, and used to build resource management systems.

*Price:* DM 79.50.

*Orders to:* Springer Verlag, Heidelberger Platz 3, D-1, Berlin 33, Fed. Rep. of Germany (ISBN 3-540-90379-8), or:

175 Fifth Avenue, New York, NY 10010, U.S.A. (ISBN 0-387-90379-8).

**Renewable Resources in Our Future.** A. D. Hinckley. Environmental Sciences and Applications, Volume 8. Pergamon Press, Oxford, 1980, 121 p. ISBN 0-08-023433-X (flexicover); 0-08-023432-1 (hardcover).

This new volume in the series Environmental Sciences and Application is not a technical text on resource management, but rather a collection of well-illustrated essays on major groups of renewable resources, e.g. solar energy, water, soil, forests, wildlife, inland and coastal wetlands, and marine fish. It is written for all those who share the author's concern for the future.

*Price:* \$ 6.75 flexicover, \$ 13.50 (hardcover).

*Orders to:* Pergamon Press, Headington Hill Hall, Oxford OX3 0BW, England; or Maxwell House, Fairview Park, Elmsford, NY 10523, U.S.A.

**Soil Survey Applications.** M. G. Jarvis and D. Mackney, editors. Technical Monograph 13, Soil Survey of England and Wales, Harpenden, 1979, 197 p.

This book comprises papers that illustrate the range of soil survey applications and offers models for the interpretation of soil survey data, in some cases supplemented by other simple measurements. The papers were presented at a Soil Survey conference in December 1976.

In the first group of papers the properties of soils and land affecting direct drilling of combine-harvested crops, ease of cultivation, workability, droughtiness, grass production and slurry acceptance are described and methods of assessment presented.

In the second group the use of soil survey data in civil engineering an planning, the prediction of ferrous metal corrosion, the evaluation of land suitability for playing fields, parks, camping and caravan sites and the conservation of wild life is considered.

The book is illustrated with many plates and figures, including a map of Britain showing soil suitability for direct drilling and one of England and Wales to demonstrate soil suitability for grassland, both at a scale of 1:2 million.

*Price:* £ 4,- plus 40 p. for postage.

*Orders to:* Soil Survey of England and Wales, Rothamsted Experimental Station, Harpenden, Herts, AL5 2JQ, England.

**The Measurement of Soil Potassium.** J. Quémener. IPI Research Topics No. 4. International Potash Institute, Worblaufen-Bern, 1979, 48 p.

After informing the reader about the forms of potassium and considerations in the choice of analytical methods, this booklet gives possible techniques for the measurement of the various parameters of potassium dynamics. In the third part some of the more practical considerations involved in devising a plan for soil analysis are discussed. Such a plan depends on the kinds of problems posed and to the technical means available.

*Price:* SW. Frs. 8,- plus mailing charges.

*Orders to:* International Potash Institute, P.O. Box 41, CH-3048 Worblaufen-Bern, Switzerland.

**The Peatlands of Ireland.** With map at a scale of 1:575,000. R. F. Hammond. An Foras Talúntais, Dublin, 1979, 58 p. ISBN: 0-905442-38-5.

Peatland covers 16.2 percent i.e. 1.34 million hectares of Ireland. Development of these peatlands has given rise to a major industry producing about 4 million tonnes of peat fuels per annum. There is increasing interest in the future role of peatlands in the agricultural, horticultural and sylvicultural industries. The present publication has been prepared to accompany the new Peatland map of Ireland, which replaces the map of 1920. Modern concepts of peat classification have been used.

*Price:* IR £ 3.50 including packing and postage.

*Orders to:* The Agricultural Institute, Publications Dept., 19 Sandymount Avenue, Dublin 4, Ireland.

**Nitrogen and Rice.** International Rice Research Institute, 1979, 499 p. Los Banos.

Low-cost nitrogen is one of the requisites for the well-being of small rice farmers in the tropics. Nitrogen is essential for even modest rice yields. Although most of the research on nitrogen transformation and biological nitrogen fixation in soils has been oriented toward processes that take place in well-aerated drylands, much work has been done or is under way on the submerged soils and especially on the wetland soils in which rice is grown. The objectives of the symposium 'Nitrogen and Rice' were: appraisal of past and recent studies relating to nitrogen fixation in wetland soils, and consideration of research priorities aimed at developing improved nitrogen management practices in wetland rice culture.

This publication contains the 27 papers presented, summaries of the discussions, and recommendations for further research and international cooperation.

*Price:* \$ 11.25 for highly developed nations, \$ 4.50 for developing nations; plus \$ 8.- airmail charges or \$ 0.50 surface charges.

*Orders to:* Division A. Office of Information Services, The International Rice Research Institute, P. O. Box 933, Manila, Philippines.

**The big problem of the small farmer.** Ilaco, Arnhem, 1979, 145 p. ISBN 90-9000106-9.

This booklet contains the proceedings of the symposium, held in May 1979 under the same title on the occasion of the 25th anniversary of Ilaco (International Land Development Consultants), Arnhem, The Netherlands. It contains the opening address by the Dutch Minister for Development Cooperation, the four papers presented on the problems facing the small farmer in the developing countries and a discussion.

*Price:* Dfl. 8.-, including postal charges.

*Orders to:* ILACO, P.O. Box 441, 6800 AK, Arnhem, The Netherlands.

**Soils Research in Agroforestry.** ICRAF publ. 001e. H. O. Mongi and P. H. Huxley, editors; D. Spurgeon, techn. editor. ICRAF, Nairobi, 1979, 584 p.

The International Council for Research in Agroforestry (ICRAF) has been established as an agency that will promote agroforestry systems in order to achieve better land-use in developing countries by encouraging, supporting and coordinating research, training and education efforts in this field.

Research on soils and soils management in agroforestry is scanty. The speedy development of modern agroforestry production systems will hinge not only on the evaluation of traditional practices and analysis of existing agroforestry research and related intercropping investigations, but also on the appraisal of all relevant research data from agriculture, horticulture and forestry. Yet this is very widely dispersed in the literature. In order to ensure that a start be made in documenting this kind of information, this consultation of soils experts was held by ICRAF in Nairobi, Kenya, from March 26-30, 1979.

Agroforestry systems will involve growing different agricultural crops and woody perennials together in various spatial and temporal combinations. Thus, a multi-disciplinary approach is needed and all aspects of soils research in agroforestry must be considered.

The present publication contains the more than 20 papers presented and the discussions held. They are grouped into the following sections: soil fertility status; soil physical conditions; monitoring soil properties; methodologies; and research methods and strategy standardization. The experts formulated a list of soil research priorities. This publication with a wealth of data needs a wide circulation among soil and other scientists interested in agroforestry.

*Price:* \$ 15.- including surface mail charges.

*Orders to:* ICRAF, P.O. Box 30677, Nairobi, Kenya.

**Journal of Plant Nutrition,** A journal of Marcel Dekker, New York. ISSN 0190-4167.

In addition to reporting new analytical findings and techniques, the journal will encourage the publication of review papers, drawing together past and current literature. By careful evaluation and selection of articles, it will make a considerable contribution to the current understanding of plant mineral nutrition. Numerous journals are available to the plant nutritionist to publish his research findings. None up to now, however, has concentrated primarily on plant mineral nutrition. The Journal of Plant Nutrition is designed to provide rapid communication to the plant nutritionist of important current findings on the influences of known essential and non-essential elements.

*Subscription price:* \$ 40.00 per volume, \$ 20.00 per volume for individuals. Postage and handling charges outside the U.S. \$ 6.00.

*Orders to:* Marcel Dekker Journals, P.O. Box 11305, Church Street Station, New York, NY 10249, U.S.A.

**Soil Processes.** B. Knapp. George Allen & Unwin, London, 1979, 72 p., 12 photographs and 11 colour illustrations. ISBN 0-04-631011-8.

This is a profusely illustrated introduction to soil characteristics, soil forming processes, soil patterns, and soils as a resource for mankind. It is written for students in geography. Example problems are given at the end of each chapter. The appendices include the horizon terminology, a table summarising the characteristics of the major soil groups and generalized soil maps of Britain and North America. Finally, there is a glossary.

*Price:* £ 2.25 (paperback).

*Orders to:* George Allen & Unwin, P.O. Box 18, Hemel Hempstead, Herts. HP2 4TE, England.

**Soil Classification in the United States.** Marlin G. Cline. Agronomy Mimeo No. 79-12. Cornell University, Ithaca, 1979, 207 p.

In this interesting publication on the changing concepts which have guided soil classification through its various stages of development in the United States, the author begins with the classification systems of Marbut et al. (1913, 1935), Shaw (1928), Baldwin, Kellogg and Thorp (1938), and Thorp and Smith (1949). By far the greater part of the report treats the development of the new system from the early stages in 1951 up to the publication of Soil Taxonomy in 1975. Professor Cline who played a prominent role in the development of the 1949 system, is to be congratulated on saving at least part of the concepts and changing ideas on soil classification in the United States. It is regarded as essential reading for users and teachers of Soil Taxonomy.

*Price:* \$ 4.00.

*Orders to:* Department of Agronomy, 904 Bradfield Hall, Cornell University, Ithaca, NY 14853, U.S.A.

**The Breakdown and Restauration of Ecosystems.** M. W. Holdgate and M. J. Woodman, editors. Nato Conference Series. Series I, Ecology, volume 3. Plenum Press, New York and London, 1978, 496 p. ISBN 0-306-32803-8.

This volume contains the 24 papers presented at the conference 'The rehabilitation of severely damaged land and freshwater ecosystems in temperate zones', held at Reykjavic, Iceland, from 4-11 July 1976.

One of the most pressing problems of the twentieth century is how to create a lasting partnership between man and his planet, taking account of both natural change and man's impact on the environment. This volume will be welcome to ecologists, environmental planners, and government agencies concerned with the vulnerability, degradation, and restoration of ecosystems.

It examines the extent of man's destruction of ecosystems in northern temperate zones, and the resulting losses in environmental stability, biological productivity, genetic diversity, and human welfare. Case studies are used to identify and illustrate basic ecological principles for safeguarding ecosystems and for rehabilitating those that have been damaged. Guidelines for the management of ecosystems are considered, particularly ways of avoiding future devastation while ensuring optimal use of natural resources. The book provides highly relevant, practical information, and identifies some people and institutions whose knowledge may be of immense value in particular environmental situations.

*Price:* \$ 30.00

*Orders to:* Plenum Publishing Corp., 227W. 17th St., New York, NY 10011, U.S.A.

**Text Book Series in Agricultural Chemistry.** 5 Volumes, A. Sankaram. The Bangalore Printing and Publishing Co., Bangalore, 1973-1977.

Volume 1: Fundamental Principles. 186 p. *Price:* Rs. 12.50.

Volume 2: Biomolecules, structure, properties, functions. 214 p. *Price:* Rs. 14.00.

Volume 3: Biochemistry of the Plant and Animal. 186 p. *Price:* Rs. 14.00.

Volume 4: Soil science, genesis, survey, classification. 158 p. *Price:* Rs. 15.00.

Volume 5: Soil science, chemical properties. 184 p. *Price:* Rs. 16.00.

This is a student textbook series on the interrelationships between soil, plant and animal. Each volume constitutes one course at an agricultural university and gives the student an introduction to the subject mentioned, and suggested reading.

*Orders to:* the Bangalore Printing and Publishing Co., Mysore Road, Bangalore 560018, India.

**Physikalische Eigenschaften von Böden der Schweiz (Physical Characteristics of Soils in Switzerland).** Swiss Fed. Inst. of Technology, Zürich, 1978.

Today, scientific and technical information about the soils of the vegetation covered areas is required in numerous professional fields. Forestry needs such information as an ecological basis for silviculture and harvest planning. In agriculture, similar information is necessary for cultivation. Land use in general, road construction, hydrology of specific sites, groundwater technology (including the cooling of water through the use of heat-pumps), prevention of water pollution, soil improvement and yield planning as well as nature conservation are all fields in which information about the characteristics of soils in Switzerland is a pre-requisite. Until now, such information was only partly available.

The present volume defines the scientific, technical and ecological fundamentals as well as the aims and methods of the series. In addition, it includes the first four of the eighteen so-termed local forms, selected as representative soils of Switzerland. Besides the description of the site and the soil and a large number of physical and chemical data of the soil, it includes a photograph of the landscape and an excellent colour photograph of the soil profile. The soils are correlated with Soil Taxonomy and the soil units of the FAO-Unesco Soil Map of the World.

The work is produced by the Professorial Chair for Soil Physics, Swiss Federal Institute of Technology Zürich. The series is published by the Swiss Federal Institute of Forestry Research, Birmensdorf. It is planned to publish further volumes in the coming years, each volume to contain information on five or six local forms.

*Price:* SFr. 30 plus SFr. 4 postage.

*Orders to:* Professur für Bodenphysik, ETH Zürich, Zürcherstrasse 111, CH-8903 Birmenshof, Switzerland.

**Comparison of forest water and energy exchange models.** S. Halldin, editor. Developments in Agricultural and Managed-Forest Ecology. Volume 9. Elsevier, Amsterdam, 1979, 258 p. ISBN 0-444-41844-X.

Numerous ecological models have been presented during recent years, but only few of these have been comprehensively compared and tested against independent field data.

This book contains results from an IUFRO (International Union of Forestry Research Organizations) workshop, held at Uppsala, Sweden, from 24-30 September 1978, with the goal of performing such tests. Specially invited models with emphasis on micrometeorology, soil science and plant physiology were compared with respect to modelling 'philosophy' and actual model performance. The models represented a broad range in time and space and formulated equal processes in different ways. Time series and structural data collected within the Swedish Coniferous Forest Project were the common basis for comparison. Most models treated interception of radiation and precipitation, stomatal control, energy exchange in the canopy, root water uptake and soil water flow.

Besides several interesting findings revealed by model comparisons, results from the workshop enabled comparison of evapotranspiration measured by water balance and energy balance Bowen ratio methods. The discrepancy thus found indicated that, for forests, fundamentals in micrometeorological theory must be revised.

As an important contribution to ecological modelling, this book will be of interest to specialists and advanced students in fields ranging from micrometeorology, soil science, hydrology and plant physiology to systems analysis and ecological modelling in general.

*Price:* Dfl. 110.00.

*Orders to:* Elsevier Scientific Publishing Company, P.O. Box 211, 1000 AE Amsterdam, The Netherlands. For Canada and the U.S.A.: Elsevier/North Holland, 52, Vanderbilt Avenue, New York, N.Y. 10017, U.S.A.

**Heathlands and Related Shrublands.** R. L. Specht, editor. Elsevier, Amsterdam, 1979.

Volume A. Descriptive Studies, 498 p., ISBN 0-444-41701-X.

Volume B. Analytical Studies, 308 p., ISBN 0-444-41809-1.

A comprehensive two-volume survey in the series Ecosystems of the World of the world's heathland ecosystems from the Equator to the Arctic, from lowland to alpine habitats.

Heathlands and related sclerophyllous vegetation are invariably found growing on a wide range of oligotrophic soils. Although the soils are poor in plant nutrients, often waterlogged, frozen or affected by drought or fire, the vegetation includes many spectacular wild-flowers. In their struggle for survival, they have developed peculiar rootlets which are, however, susceptible to invasion by root-rotting fungi, a condition often aggravated by man's use of chemical fertilizers. The indigenous vertebrate and invertebrate animals too have developed strategies for surviving the adverse conditions and a distinctive fauna has evolved exploiting seasonal shoot growth, flowering and seed production.

The survival of the heathlands and the long-range conservation of its flora and fauna is beset with difficulties. This work will be a valuable reference for all those involved with ecological problems of conservation, management, agriculture and forestry.

*Price:* Dfl. 170.00 per volume.

*Orders to:* see above.

**Primer for Agricultural Libraries** (second edition, revised and enlarged). O. Lendvay. Pudoc, Wageningen, 1980, 97 p. ISBN 90-220-0727-8.

This manual, which is an updated combination of 'The Primer for Agricultural Libraries' and another short manual, 'Administration of Agricultural Libraries' (published in Spanish), has been designed to provide some idea about what is involved in the operation of a library. It is directed towards helping those people who must operate an agricultural library even though they have not had the benefit of adequate specialised training. It contains the basic concepts of library administration, and comments have been briefly offered on all the aspects of library practice. In addition, for those who would like to acquire, by reading, a more extensive knowledge in these fields, it provides a bibliography with references to publications which are used in library work, and others on various topics of library practice and the handling of information. Included as appendices are some guides to the more important publications which control the production of agricultural literature and the like because these are useful in the selection and acquisition of library material.

This handsome, useful manual has been prepared and published under the auspices of the International Association of Agricultural Libraries and Documentalists.

*Price:* Dfl. 15.00.

*Orders to:* Pudoc, P.O. Box 4, 6700 AA Wageningen, The Netherlands.

**Arid Lands Abstracts.** Commonwealth Agricultural Bureaux, Farnham Royal, ISSN 0143-6368.

This new abstract journal is published jointly by the Arid Lands Information Center, Tucson, Arizona, U.S.A., and the Commonwealth Agricultural Bureaux.

*Subscription price:* 1980 \$ 300.00 or £ 135.

*Orders to:* Central Sales, Commonwealth Agricultural Bureaux, Farnham Royal, Slough SL2 3BN, England.



**Soil Physics.** T. J. Marshall and J. W. Holmes. Cambridge University Press, 1979, 345 p. Paperback : ISBN 0-521-29579-3; Hard cover: ISBN 0-521-22622-8.

This account is for students of soil physics and for scientists whose work is with soils, plants and water resources. The central connecting theme is the state of water in soil or deeper sediments. It gives an account of how water influences the physical properties of soils, such as stability of structure and ease of tillage; how plants absorb water from soils and the limits that drought or surfeit of water can impose; how water from rain or irrigation flows through soils and aquifers and contributes to stream flow or to drainage; how water is drawn through soils and can deposit salts that produce saline soils in arid zones; and how the evaporation rate from the land surface is influenced by soil water supply as well as by the evaporative power of the atmosphere.

This book will be useful to university teachers and students in agriculture, soil science, civil engineering, agricultural engineering and environmental science. It is written at the upper level of undergraduate teaching. Established scientists will find it useful as it gives a comprehensive account of soil physics with emphasis upon field applications.

*Prices:* £ 8.95 (paperback); £ 27.50 (hard cover).

*Orders to:* Cambridge University Press, P.O. Box 110, Cambridge CB2 3RL, England.

**An African Dam.** R. S. Odinga, editor. Ecological Bulletins 29. Swedish National Science Research Council, Stockholm, 1979, 183 p. ISBN 91-546-0256-4.

The Tana is the largest river in Kenya and the most important source of water power in the country. Over the last ten years the Upper Tana area has seen the development of three hydro-electric power schemes, based on dams aimed primarily at the production of electricity and ignoring the needs of irrigation, fisheries and similar demands for the same water. Even though the area is essentially semi-arid, tsetse fly infested and previously unattractive to population, the opening of the region by dam building has brought with it significant numbers of people who are trying to make a living as subsistence farmers, pastoralists, small scale businessmen or employees of the power company.

The study contains an assessment of the overall impact of this new population on the physical, biological and social environments in the area.

*Price:* SwCr 40 (above US \$10, including airmail charges).

*Order to:* Editorial Service, NFR, P. O. Box 23136, 10435 Stockholm, Sweden.

**Climates Throughout Geologic Time.** L. A. Frakes. Elsevier, Amsterdam, 1979, 310 p. ISBN 0-444-41729-X.

This book on paleoclimates is a concise, integrated history of the climatic conditions of the Earth throughout all geologic time. Basing his interpretations on global reconstructions from rock magnetism and sea-floor spreading data, and using sedimentological, biological and chemical indicators of climate, Dr. Frakes documents and discusses the evolution of the Earth's climates on a world scale. The Deep Sea Drilling Project has yielded a vast amount of new information on oceanic climates and the author has made use of this in his detailed reconstruction of the climatic changes of the Mesozoic and Cenozoic eras.

The main part of the book is concerned with deciphering the thermal history of the Earth through comparisons with its present state. This analysis reveals a number of anomalies which are examined in the book, the two most outstanding being the late Precambrian, with its widespread low-latitude glaciation, and the Mesozoic, when the ocean-atmosphere system retained an extraordinary amount of solar energy.

The broad scope of the book and the integrated approach to the subject makes this work of great value to all those involved with paleoclimatology.

*Price:* Dfl. 120.00.

*Orders to:* Elsevier Scientific Publishing Company, P.O. Box 211, 1000 AE Amsterdam, The Netherlands.

**Handbook of Soil Mechanics.** A. Kezdi. Volume 2, Soil Testing. Elsevier, Amsterdam, 1979, 246 p. ISBN 0-444-99778-4.

Volume 1 of the Handbook of Soil Mechanics (Soil Physics) appeared in 1974. The recently published Volume 2 covers almost the entire field of soil investigations and is intended for use as a textbook or manual for laboratory and field testing of soils for civil engineering purposes. The first part describes laboratory tests, based on internationally accepted methods. Particularly detailed descriptions of the testing methods are given as well as an analysis of possible sources of error, as reliability of laboratory work depends upon painstaking and precise performance of individual investigations. The second part of the book covers the most important field investigations where, depending upon the specific objectives, more freedom in the performance of the tests is permissible.

For the benefit of laboratory personnel, every aspect of each individual test is described, i.e. definition, equipment, preparation and performance, data processing, numerical example, process error. The text is supplemented by numerous diagrams and tables and an added facility is the provision of laboratory sheets for measured data, furnished with examples.

*Price:* Dfl. 145.00.

*Orders to:* Elsevier Scientific Publishing Company, P.O. Box 211, 1000 AE Amsterdam, The Netherlands. Distributed in Eastern Europe, China, Cuba, Mongolia, North Korea and Vietnam by Akadémiai Kiadó, Budapest, Hungary.



**Introduction to the Principles and Practice of Soil Science.** R. E. White. Blackwell, Oxford, 1979, 198 p. ISBN 0-632-00052-X.

This clearly written and attractive publication on basic concepts of the properties and behaviour of soils is written for students in soil science as well as for those whose main interest lies in agriculture, forestry, ecology or geography. The book contains three sections. The Soil Habit gives a general introduction to the soil, the mineral and organic components and the structure. In Processes of Soil Formation the author discusses the influences of soil-forming factors, water and air, and processes in profile development. The Utilization of Soils contains chapters on the cycling of nutrients, maintenance of soil fertility and fertilizer use.

The book finishes with chapters on salt-affected soils and some aspects of irrigation and drainage, and on soil classification and survey procedures. All chapters are concluded with a summary, some references and suggestions for further reading. The publication contains many elucidating graphs, tables and drawings.

*Price:* £ 8.50 plus postage and packing.

*Orders to:* Blackwell Scientific Publications, Osney Mead, Oxford OX2 OEL, England.

**Dünger und Düngung; Grundlagen, Anleitung zur Düngung der Kulturpflanzen.** A. Finck. Verlag Chemie, Weinheim und New York, 1978, 422 A., 33 Abb., 83 Tab. ISBN 3-527-25805-1.

Das Ziel dieses Buches ist es, einen Überblick über Eigenschaften und Anwendung der Düngemittel sowie zahlreiche Ratschläge für die praktische Düngung der Nutzpflanzen in übersichtlicher Form zu geben und zwar in einem weiten Rahmen einschliesslich vieler Randgebiete sowie mit besonderer Betonung der Qualität der erzeugten Produkte. Wichtige und problematische Fragen werden wissenschaftlich behandelt, aber auch für die Praxis vereinfacht zusammengefasst, wo dies möglich und notwendig erscheint.

*Inhaltsübersicht:*

Einleitung; Mineralogische Einnährstoffdünger; Spurennährstoffdünger; Mehrnährstoffdünger u.a.; Dünger zur Bodenverbesserung und allgemeinen Wachstumsförderung; Die optimale Düngermenge; Spezielle Düngungsfragen; Düngung landwirtschaftlicher Kulturpflanzen; Düngung im Gartenbau, Forst und in Sonderkulturen; Düngung und Qualität pflanzlicher Nahrung.

*Betrag:* DM 58.00

*Bestellungen:* Verlag Chemie, Postfach 1260/1280, D-6940 Weinheim, BRD.

A. van Diest, Wageningen, Niederlande

**Glossary of Soil Science Terms.** Soil Science Society of America, Madison, U.S.A., 1979, 37 p.

A newly-revised edition of the Glossary of Soil Science Terms, containing over 1,100 terms, includes two new appendices for terminology in soil chemistry and soil microbiology and biochemistry, plus a number of revisions in previously published terms. This booklet is a publication of the Soil Science Society of America which has published definitions or glossaries of soil science terms since 1956.

Appendix VIII, dealing with soil chemistry, contains 23 new terms in this subject area. Appendix IX contains 10 new terms dealing with soil microbiology and biochemistry. In addition, revisions were made in 30 previously published terms in soil chemistry, and 29 terms in soil microbiology and biochemistry. The new appendices were developed by special terminology subcommittees related to these specific subject matter divisions within SSA.

The Glossary now includes the following appendices: I – clay mineralogy, II – soil classification, III – soil chemistry, IV – soil microbiology and biochemistry, V – tillage terminology, VI – soil fertility and plant nutrition, VII – soil physics, VIII – soil chemistry, and IX – soil microbiology and biochemistry. These appendices contain 393 definitions and several tabular listings. The basic Glossary contains 730 terms plus 4 tables and 1 graph.

This Glossary is published in an effort to provide a foundation for common understanding in communications covering soil science.

*Prices:* \$ 2.00 each for 1-5 copies; \$ 1.75 each for 6-25 copies; and \$ 1.50 each for 26 or more copies.

*Orders to:* American Society of Agronomy, Dept. ISSS, 677 South Segoe Road, Madison, WI 53711, U.S.A.

**Soil Teaching Aid.** A. R. Aandahl. University of Nebraska Press, Lincoln, 1979. ISBN 0-8032-5902-6.

This set includes 140 colour slides in a carousel, a manual of 140 pages, a 90 minute cassette and the Soil Map of the Great Plains at 1:2,500,000. The 70 soil series selected for inclusion illustrate soil characteristics and soil horizons used to define and distinguish different soil series. Most of them are in the ten Great Plains States, but a few are from other places in the United States.

The manual contains for each selected soil two pages of information. The first has colour photographs of landscape and profile, and a short profile description, both intended for people who are not trained in soils. The second page has information on a typifying pedon and is meant for those who desire more information about the soil series. All soils are classified in Soil Taxonomy at family level.

The soils were expertly photographed, the slides are of high quality. Although prepared for use in the United States, the information is also beneficial for soil scientists in other countries. Professor Aandahl is to be congratulated with the preparation and production of this fine set.

*Price of the set:* \$ 125.00.

*Orders to:* University of Nebraska Press, 901 North 17th Street, Lincoln, Nebraska 68588, U.S.A., or: American University Publishers Group, 1 Gower Street, London WC1E 6HA, England.

## RECENT FAO PUBLICATIONS

The publications can be obtained through the national distributors of FAO publications or by writing to the Distribution and Sales Section, FAO, Via delle Terme di Caracalla, 00153 Rome, Italy. These are priced publications.

**Yield Response to Water.** J. Doorenbos and A. H. Kassam, Irrigation and Drainage Paper No. 33. FAO, Rome 1979, 193 p.

This very interesting publication is in two parts. The first gives a methodology for quantifying the crop yield response to water under both adequate and limited water supply. The maximum and actual evapotranspiration are related to actual yield by a yield response factor. Applications in irrigation planning and operation and for research are described. The second part illustrates the methodology with a detailed account of the water-related yield and quality of field crops. The publication fills a need for all soils or water specialists concerned with crop production.

**Soil Survey Investigations for Irrigation.** Soils Bulletin No. 42. FAO, Rome, 1979, 188 p.

This is a somewhat shortened and updated version of a draft circulated in 1975. The chapters deal with soil characteristics, topography, drainage and reclamation, soil survey methods, and interpretation, land classification and selection of lands for irrigation. Appendices give an account of the United States Bureau of Reclamation land classification and some field permeability and infiltration tests. The original interpretation and land classification sections have become outdated and these sections are short because of the intention to prepare a separate bulletin on this subject.

**Land evaluation criteria for irrigation.** Report of an expert consultation, Rome 27 February-2 March 1979. World Soil Resources Reports No. 50. FAO, Rome, 1979, 219 p.

This report contains nineteen papers divided into four sections. The first part is on approaches and experiences in diverse countries and organizations. Then land evaluation standards for various irrigation techniques are described followed by criteria for specific crops (sugarcane and rice) and soils (Vertisols and gypsiferous soils). Finally, economic implications and requirements for investment are discussed.

Of particular interest may be the up-to-date accounts of concepts by the representatives of the World Bank and the U.S. Bureau of Reclamation. The report contains much useful information but the title implies more than the book contains. But the consultations clearly spelled out the need for a manual, compiling existing knowledge of the relationships between crops, soils, water and irrigation methods, and indicating recommended methods of using it.

**Report on the Agro-ecological Zones Project. Vol. 1, Methodology and Results for Africa.** World Soil Resources Report No. 48. FAO, Rome, 1978, 158 p. ISBN 92-5-100589-3.

Projections reveal that to sustain the likely world population in the year 2000 an increase of 60 percent in agricultural production will be required. 'Is there sufficient land to do this?' becomes the overriding question, but little precise information exists on which to base a reliable answer. Previous appraisals of the global extents of arable lands, to support present and future human populations, vary from 3 to 7 thousand million hectares. Estimates of the populations these lands can support, vary from 7.5 to 40 thousand million.

These estimates however, do not take into account differences in production potential when it is calculated for different crops and different levels of inputs and technology. Such factors must be taken into account to arrive at realistic estimates of the agricultural production potential of the various lands of the world.

FAO initiated, in September 1976, a study of potential land use by agroecological zones to obtain a first approximation of the production potential of the world's land resources, and to provide the physical data base necessary for planning future agricultural development. Initially the project deals with rainfed production potential, at two levels of inputs, for eleven crops in developing countries.

The present volume reports results for Africa. Part A gives general and technical accounts of the overall methodology employed in the assessment. Part B provides simple information on the rainfed agricultural production potential of the continent's various land resources. The former part is intended for national staff wishing to apply the developed techniques to detailed individual country studies, to which the methodology is equally applicable.

**Rapport sur le projet relatif aux zones agro-écologiques. Vol. 1. Méthodologie et résultats pour l'Afrique.** Rapports sur les ressources en sols du monde no 48. FAO, Rome, 1979, 158 p. ISBN 92-5-200589-7.

Le premier volume de cette étude est maintenant disponible en anglais et en français. On espère que cette méthodologie innovatrice sera examinée et testée au niveau national dans une large gamme de conditions environnementales et économiques en vue d'améliorer la contribution que la zonation agroécologique peut apporter à la planification du développement.

**Report on the Agro-ecological Zones Project. Vol. 2, Results for Southwest Asia.** World Soil Resources Report No. 48/2. FAO, Rome, 1978, 28 p. ISBN 92-5-100694-6.

The present volume reports results for Southwest Asia, providing simple information on the rainfed production potential of the region's various land resources. It is also available in Arabic.

**Film Loan Catalogue FAO, 1979.** FAO, Rome, 1979, 277 p.

The more than 1100 films in this catalogue are assembled in subject chapters and films on similar or related subjects are grouped together. The films are available on free loan for non-commercial use, up to two weeks not including transport time.

Requests for the catalogue should be sent to: Film Loan Library, Information Division, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy.

**Themenheft Bodenbiologie, Zeitschrift für Pflanzenernährung und Bodenkunde (Journal of Plant Nutrition and Soil Science), Heft 3/1979.** Verlag Chemie, Weinheim, 1979. ISSN 0044-3263.

Heft 3/79 der Zeitschrift für Pflanzenernährung und Bodenkunde behandelt diesmal ausschliesslich Beiträge und Arbeiten aus dem Bereich der Bodenbiologie, jener Teildisziplin der Bodenkunde, welche sich schwerpunktmässig mit den ökologischen Wechselwirkungen und Leistungen der Mikro-organismen in ihren natürlichen Lebensräumen, den Böden, beschäftigt. Heute wird bodenbiologische Forschung sowohl von der Agrar- und Geowissenschaftlichen Seite als auch von der Biologie her mit unterschiedlicher Fragestellung und in Instituten mit den verschiedensten fachlichen Ausrichtungen betrieben. Eine solche Differenzierung und Dezentralisierung hat dazu geführt, dass die Ergebnisse bodenbiologischer Forschung in einem breiten Spektrum von Zeitschriften und Publikationsorganen veröffentlicht werden. Das Heft dokumentiert die Vielfalt der bodenbiologischen Verflechtungen ebenso wie das breite Feld, auf dem sich die Bodenbiologie heute in der Bundesrepublik Deutschland bewegt. Die zahlreichen Berührungspunkte mit anderen geowissenschaftlichen Arbeitsgebieten lassen schliesslich einmal mehr die Notwendigkeit interdisziplinärer Forschung erkennen. Voraussetzungen hierfür sind jedoch nicht nur eine bessere Kenntnis der einzelnen Arbeitsrichtungen untereinander, sondern auch und vor allem ein regelmässiger Informationsaustausch.

*Betrag:* DM 42,-, zuzüglich Porto und Versandkosten.

*Bestellungen:* Verlag Chemie, Postfach 1260-1280, D-6940 Weinheim, Bundesrepublik Deutschland.

**Soil & Tillage Research.** A quarterly publication of Elsevier, Amsterdam. ISSN 0167-1987.

This is a new international journal on research and development in soil tillage and field traffic, and their relationships with soil environment, land use and crop production.

It is published in collaboration with the International Soil Tillage Research Organization (ISTRO), and will commence as a quarterly.

*Subscription price:* 1980/81; volume 1 (4 issues) Dfl. 146.00 including postage.

*Orders to:* Elsevier Scientific Publishing Company, Journal Division, P.O. Box 211, 1000 AE Amsterdam, The Netherlands.

**The International Tree Crops Journal.** A Quarterly Journal from AB Academic Publishers, Oxford.

The International Tree Crops Journal is the first journal to focus on the development of new tree crops, and multiple land use practices producing both wood and food or other cash crops collectively known as agroforestry. There is a growing awareness of not only the large number of potentially economic tree crops which await large-scale utilisation, but also the need to consider forestry and agriculture together if effective long-term management of land and proper evaluation of forest genetic resources is to be ensured, especially in the tropics. The emphasis of the journal will be on the communication of research results as well as on the exchange of practical experience; papers, letters and news items will be published within the following subject areas: non-wood tree crops; agroforestry; environmental management; processing; and forestry for local development.

*Subscription price:* (1980) \$ 55.00 or £ 25.00, post paid (personal subscribers \$ 25 or \$ 12).

*Orders to:* AB Academic Publishers, P.O. Box 15, Oxford OX1 38B, England.

**Colloids and Surfaces.** An International Journal Devoted to the Applications and Principles of Colloid and Interface Science. Quarterly. Elsevier. ISSN 0166-6622.

This new international journal is concerned with applications and principles of colloidal and interfacial phenomena. It is designed to encourage publication of basic colloid and surface science and, in particular, its application in engineering and applied science. In addition to research papers, the journal will contain notes, brief communications, book reviews and announcements.

Areas, topics and subjects that will be covered include emulsions, foams, aerosols, detergency and wetting, flocculation and dispersion, rheology, cosmetics, paints, foods, paper and pulp, electrokinetic and electrode phenomena, friction and lubrication, thin films, liquid membranes and bilayers, biomaterials and biocolloids, polymer colloids, pharmaceutical and related health sciences, environmental and aquatic systems, water treatment and dewatering, agricultural and soil science, minerals extraction and metallurgy, precipitation and crystal growth and modification.

*Subscription price:* (1980) Dfl. 166 or US \$ 81.

*Orders to:* Elsevier Scientific Publishing Company, P.O. Box 330, 1000 AH Amsterdam, The Netherlands.

**NEWS FROM THE ISSS SECRETARIAT AND TREASURY  
NOUVELLES DU SÉCRÉTARIAT ET DE LA TRÉSORERIE DE L'AISS  
MITTEILUNGEN DES IBG-SEKRETARIATS UND DER  
KASSENVERWALTUNG**

**EXECUTIVE COMMITTEE MEETING IN NEW DELHI**

In accordance with the new Rules of the Society, the Executive Committee held an official Inter-Congress Meeting in New Delhi, India on 17th February 1980.

Present were Dr. J.S. Kanwar, ISSS President, the Vice President Dr. J.D.R. Bhumbra, the Secretary-General Dr. W.G. Sombroek, and the Deputy Secretary-General Prof. Dr. I Szabolcs. Though purposely the meeting immediately preceded the ISSS international meeting at Karnal, all of the three Past-Presidents, the Treasurer and all of the seven Commission Chairmen had sent their regrets on being unable to attend. In their place the 3rd Vice-Chairmen of the seven Commissions participated in the meeting. There was however no formal delegation of duties by the Committee Chairmen, hence no quorum for official transaction of business.

The former Secretary-General, Dr. R. Dudal, attended the meeting in an advisory capacity.

The first part of the meeting dealt with the *preparations for the next Congress*. The President and various members of the Organising Committee explained the progress made thus far, which appeared very promising (details will be given in the next Bulletin).

The second part of the meeting dealt with various *ad-hoc matters of the International Society*.

**Finances:**

The Secretary-General, on behalf of the Treasurer, gave a review of the present financial situation (see this Bulletin). Only superficially this looks quite sound. Several positive factors, like an annual contribution of the Dutch Soil Survey Institute, and the relatively cheap dispatching of the Bulletin through Belgium may be short-lived.

**Rules:**

Some uncertainties and inconsistencies in the new Rules of the Society were discussed (dispatching of the printed Rules to all members is taking place together with this Bulletin).

**By-laws:**

The Committee-on-Rules has formulated a provisional set of By-laws, that will be forwarded to all potential Council members one year in advance of the Congress, for their consideration and action. Because they contain a number of recommendations on the smooth running of elections at the Congress, it is suggested that there will be an extra session of the Council immediately before the start of the Congress, at which occasion the By-laws can be formally adopted.

**List of Members:**

The new list (dispatched with this Bulletin) reflects the membership situation at the beginning of 1980. The Secretariat will try to have another List-of-Members available just before the start of the Congress, reflecting the situation at the end of 1981.

**Emblem:**

At the Edmonton Council meeting, the final choice of an Emblem for the Society was left with the Secretary-General. A new version was shown and commented upon.

Further comments would be invited at forthcoming expert meetings in Rome in April 1980 (see this Bulletin for the final version).

#### **Letterheads:**

Standard letter-heads, with the emblem, are to be used by all Officers of the Society, and the Chairmen of the (Sub)Commissions and the various Working Groups. The Secretary-General will distribute the necessary materials for local printing.

#### **Inter-Congress conferences:**

A review was given of past and future meetings, including some new ones, on which adhesion of one or more Commissions was requested (see this Bulletin).

After the closure of the Executive Committee meeting all participants travelled to Karnal to participate in the International Symposium on Salt-affected Soils (see this Bulletin).

### **RÉUNION DU COMITÉ EXÉCUTIF À NEW DELHI**

Conforme au Règlement nouveau de l'Association, le Comité Exécutif a organisé une réunion Inter-Congrès officielle à New Delhi, Inde, le 17 février 1980.

Le Dr. J.S. Kanwar, Président de l'AISS, le Vice-Président Dr. J.D.R. Bhumbla, le Secrétaire-Général Dr. W.G. Sombroek et le Secrétaire-Général Adjoint, Prof. Dr. I Szabolcs, étaient présents. Bien que la réunion soit organisée intentionnellement juste avant la réunion internationale de l'AISS à Karnal, tous les trois Anciens-Présidents, le Trésorier et tous les sept Présidents des Commissions avaient fait connaître qu'ils regrettent de ne pas avoir la possibilité d'assister à cette réunion. A leurs places les 3<sup>mes</sup> Vice-Présidents des sept Commissions participaient à la réunion. Cependant les Présidents des Commissions n'avaient pas délégué formellement leurs responsabilités aux Vice-Présidents. A cause de cela il n'y avait pas de quorum pour des transactions officielles d'affaires.

L'ex- Secrétaire-Général, Dr. R. Dudal, assistait à la réunion dans une capacité consultative.

Dans la première partie de la réunion on traitait les *préparations du prochain Congrès*. Le Président et plusieurs membres du Comité Organisant expliquaient le progrès jusque-là, qui paraît d'être plein de promesses (les détails seront donnés dans le prochain Bulletin).

Dans la deuxième partie de la réunion on traitait des divers *affaires ad-hoc de l'Association Internationale*.

#### **Finances:**

Le Secrétaire-Général donnait un sommaire de la situation actuelle des finances (cf. ce Bulletin). Cette situation ne semble florissant que de superficie. Plusieurs facteurs positifs, comme une contribution annuelle de l'Institut de Cartographie des Sols des Pays-Bas, et comme l'envoi relativement de bon marché du Bulletin par la Belgique, ne pourraient pas durer.

#### **Règlement:**

Quelques doutes et inconséquences dans le Règlement nouveau de l'Association ont été discuter (l'envoi du Règlement imprimé à tous les membres se passe au même temps que l'envoi de ce Bulletin).



**Règlement d'ordre intérieur :**

Le Comité du Règlement a rédigé une série provisoire du règlement d'ordre intérieur. Cette série sera envoyée à tous les membres potentiels du Conseil un an en avance du Congrès, pour leur considération et action. Parce qu'ils contiennent un certain nombre de recommandations sur le cours d'élections au Congrès, on a suggéré qu'il y aurait une session supplémentaire du Conseil, juste avant le début du Congrès, à quelle occasion le règlement d'ordre intérieur pourra être adopté officiellement.

**Liste de membres :**

La nouvelle liste (envoyée avec ce Bulletin) reflète la situation de l'affiliation au début de 1980. Le Secrétariat essayera d'avoir une autre Liste de membres disponible juste avant le début du Congrès, qui donnerait la situation au fin de 1981.

**Emblème :**

A la Réunion du Conseil à Edmonton, la choix définitif d'une Emblème pour la Société était confié au Secrétaire-Général. Une version nouvelle était montrée et jugée. Des observations additionnelles seront demandées au assemblées des experts à Rome en avril 1980 (cf. ce Bulletin pour la version définitive).

**En-têtes :**

Des en-têtes uniformes, avec l'emblème, doivent être employées par tous les membres du Bureau de la Société, et les Présidents des (Sous)-Commissions et des Groupes de Travail diverses. Le Secrétaire-Général distribuera les matériaux nécessaires pour l'imprimerie locale.

**Les Conférences Inter-Congrès :**

Un résumé était donné des Réunions passées et futures, y compris quelques nouvelles, pour lesquelles l'adhésion d'une ou plusieurs Commissions était demandée (cf. ce Bulletin).

Après la conclusion de la réunion du Comité Exécutif tous les participants se rendaient à Karnal pour participer au Symposium International sur Sols Salins (cf. ce Bulletin).

**TAGUNG DES VERWALTUNGS-AUSCHUSSES IN NEW DELHI**

In Übereinstimmung mit der neuen Satzung der Gesellschaft hat der Verwaltungsausschuss am 17. Februar 1980 in New Delhi, Indien, eine offizielle Zwischen-kongress Sitzung gehalten.

Anwesend waren Dr. J.S. Kanwar, IBG-Präsident, der Vizepräsident Dr. J.D.R. Bhumbla, der Generalsekretär Dr. W.G. Sombroek und der stellvertretender Generalsekretär Prof. Dr. I. Szabolcs. Obwohl die Tagung eigens unmittelbar vor der internationalen IBG-Tagung in Karnal stattfand, hatten die drei Altpräsidenten, der Schatzmeister und alle sieben Kommissionen-Vorsitzenden ihr Bedauern bekundet, dass sie nicht imstande waren, der Tagung beizuwohnen. Stellvertretend hatten die 3ten Vizepräsidenten der sieben Kommissionen an der Tagung teilgenommen. Es gab jedoch keine formelle Delegation von Befugnis durch die Kommissionspräsidenten, daher gab es kein Quorum zur offiziellen Erledigung von Angelegenheiten.

In einer empfehlenden Eigenschaft besuchte auch der ehemaliger Generalsekretär, Dr. R. Dudal, diese Tagung.



Während des ersten Teils der Tagung wurden die *Vorbereitungen für den nächsten Kongress* erörtert. Der Präsident und verschiedene Mitglieder des Organisationsausschusses berichteten über den derzeitigen Stand der Dinge, der sehr vielversprechend erschien (Einzelheiten werden in das nächste Mitteilungsblatt gegeben).

Während des zweiten Teils der Tagung wurden verschiedene *ad-hoc Angelegenheiten der Gesellschaft* behandelt.

#### **Finanzen:**

Der Generalsekretär gab im Namen des Schatzmeisters eine Übersicht über die heutige finanzielle Situation (siehe dieses Mitteilungsblatt). Nur oberflächlich sieht es solvent aus. Verschiedene positive Faktoren, wie ein jährlicher Beitrag des Niederländischen Bodenkundlichen Instituts und die relativ billige Versendung der Mitteilungsblätter in Belgien werden vielleicht nur von kurzen Dauer sein.

#### **Satzung:**

Einige Unsicherheiten und Widersprüche in der neuen Satzung der Gesellschaft wurden besprochen (die gedruckte Satzung wird zusammen mit diesem Mitteilungsblatt an alle Mitgliedern versandt).

#### **Vereinsordnung:**

Die Vorstandskommission hat einen provisorischen Entwurf der Vereinsordnung formuliert; dieser Entwurf wurde ein Jahr vor dem Kongress allen potentiellen Mitgliedern des Beirates zur Beurteilung und Behandlung geschickt. Da die neue Ordnung einige Empfehlungen für den zügigen Fortgang der Wahlen in den Kongress enthalten, ist beantragt worden, dass direkt vor Beginn des Kongresses eine extra Tagung des Beirates stattfinden soll.

#### **Mitgliederverzeichnis:**

Das neue Verzeichnis (verschickt mit diesem Mitteilungsblatt) giebt die Mitglieder-situation anfang 1980 wieder. Das Sekretariat wird versuchen vor Anfang des Kongresses ein neues Mitgliederverzeichnis verfügbar zu haben, dass die Situation am Ende 1981 wiedergeben wird.

#### **Emblem:**

Während der Versammlung des Beirates in Edmonton wurde die entgeltliche Wahl des Emblems dem Generalsekretär überlassen. Eine neue Version wurde gezeigt und kommentiert. Weitere Kommentare können während der nächsten Experten Tagungen in Rom gegeben werden in April 1980 (siehe dieses Mitteilungsblatt für die endgültige Version).

#### **Briefköpfe:**

Normalbriefköpfe mit dem Emblem sollten von allen Mitgliedern des Vorstands und den Vorsitzenden der (Sub)kommissionen und der verschiedenen Arbeitsgruppen benützt werden. Der Generalsekretär wird die notwendigen Materialien für die lokalen Drucklegungen versenden.

#### **Zwischen-kongress Konferenzen:**

In dieses Mitteilungsblatt wird eine Übersicht über die vergangenen und zukünftigen Tagungen gegeben, sowie über einige Neue, die von einer oder mehreren Kommissionen mit Bitte um Zustimmung vorgelegt worden sind.

Nach dem Ende der Tagung des Verwaltungsausschusses reisten alle Teilnehmer nach Karnal um an dem Internationalen Symposium über Salzböden teilzunehmen.

## ANNOUNCEMENT OF THE ISSS COMMITTEE ON RULES

The voting for changes to the Rules of the Society (cf. ISSS Bulletin no. 51 of 1977) was counted at the Edmonton Congress. There proved to be a clear majority by more than two-thirds to all the issues except the following:

1. That a separate post of Treasurer be created.
2. That the Deputy Secretary-General should be a member of the Executive.
3. That the Executive should be expanded by the addition of two Vice-Presidents or two Past-Presidents.

The voting in favour of having a separate post of Treasurer received 59% of the votes. The Chairman of Rules Committee consequently suggested to the Council at Edmonton that this could be accepted, under Rule G3. The Council accepted the recommendation and Dr. Gabriëls was elected Treasurer. Implicit in the voting was the notion that, as an Officer of the Society, the Treasurer would be a member of the Executive.

On the other two issues Council accepted the Chairman's recommendation of a further vote which, under the new Rule N, had to be done by post. This postal voting was carried out in two stages (ISSS Bulletin 54 and 55) and has now been completed. The voting was clear-cut in the case of the Deputy Secretary-General, who now becomes a member of the Executive.

There was a majority in favour of expanding the Executive by the addition of two Past-Presidents, both in the 1978 Edmonton vote, and in the 1980 vote. This was not a two-thirds majority, but since in the earlier voting of 1978 there had been a very large majority (nearly 95%) for the expansion of the Executive Committee as such, the Committee on Rules, by majority decision and invoking Rule G3, recommends that the members' decision to expand the size of the Executive would be met by making the three Past-Presidents members of the Executive.

Rome, April 1980,  
Dr. E.G. Hallsworth,  
Chairman ISSS Committee-on-Rules

This recommendation of the Committee on Rules has subsequently been adopted, through majority vote, by the Executive Committee in its old composition. The relevant texts have been inserted in the new Rules of the Society, as printed in June 1980.  
Secretary-General.

## COMMUNICATION DE L'AISS-COMITÉ DU RÈGLEMENT

Au Congrès d'Edmonton le scrutin pour des changements du Règlement de la Société (cf. Bulletin de l'AISS no. 51 de 1977) a été dépouilli. Il se manifestait une majorité claire de plus que deux-tiers des votes pour tous les articles sauf les suivants:

1. Qu'un poste séparé de Trésorier doit être créé.
2. Que le Secrétaire-Général Adjoint sera membre du Comité Exécutif.
3. Que le Comité Exécutif devrait être élargi avec l'adjonction de deux Vice-Présidents ou de deux Anciens Présidents.

Le vote pour le poste séparé du Trésorier a reçu un pourcentage de 59% des votes. Par conséquent le Président du Comité du Règlement suggérait le Conseil d'Edmonton d'accepter cette proposition en vertu du Règle G3. Le Conseil acceptait cette

recommandation et Dr. Gabriëls était élu Trésorier. Le scrutin impliquait que, comme membre du Bureau de la Société, le Trésorier sera membre du Comité Exécutif.

En ce qui concerne les autres deux articles, le Conseil a accepté la recommandation du Président, que le scrutin doit être continué par la poste, en vertu du nouveau règle N. Ce scrutin postal a été effectué en deux parties (Bulletin de l'AISS no. 54 et 55) et a été terminé maintenant. Le scrutin dans le cas du Secrétaire-Général Adjoint était clair et par conséquence il sera membre du Comité Exécutif.

Le scrutin pour élargir le Comité Exécutif avec l'adjonction de deux Anciens Présidents résultait dans une majorité. Cette majorité était réalisée au scrutin d'Edmonton aussi bien qu'au scrutin de 1980. Cette majorité n'était pas de deux-tiers, mais, parce qu'avec le scrutin antérieur de 1978 il y avait une majorité très grande (prèsque 95%) pour l'élargissement du Comité Exécutif comme tel, le Comité du Règlement, par décision de majorité et en faisant appel au Règle G3, recommande que la décision des membres d'élargir le Comité Exécutif peut être effectuée par l'adjonction des trois Anciens Présidents au Comité Exécutif.

Rome, Avril 1980,  
Dr. E.G. Hallsworth,  
Président Comité du Règlement de l'AISS.

Cette recommandation du Comité du Règlement a été adoptée plus tard par le Comité Exécutif de composition ancienne, nouvellement par majorité des voix. Les textes en question ont été insérés dans le Règlement nouveau du Société, comme imprimé en Juin 1980.

Secrétaire-Général.

## BERICHT DES IBG SATZUNGSKOMITEES

Die Abstimmung zur Änderung der Satzung unserer Gesellschaft (vergl. IBG Bulletin Nr. 51, 1977) ist während des Kongresses von Edmonton ausgezählt worden. Es stellte sich heraus, dass sich eine klare Mehrheit (mehr als 2/3 der abgegebenen Stimmen) für die Änderungen entschieden hat, mit Ausnahme der folgenden:

- 1) dass für den Schatzmeister ein separates Amt geschaffen werden soll.
- 2) dass der stellvertretende Generalsekretär Mitglied des Verwaltungsausschusses sein soll.
- 3) dass der Verwaltungsausschuss durch zwei Vizepräsidenten oder zwei Altpräsidenten erweitert werden soll.

Für ein separates Amt des Schatzmeisters sind 59% der Stimmen abgegeben worden. Demnach hat der Vorsitzende des Satzungskomitees dem Beirat in Edmonton vorgeschlagen, diese auf Grund der Regel G3 zu akzeptieren. Der Beirat nahm die Empfehlung an und Dr. Gabriëls wurde zum Schatzmeister gewählt. In der Abstimmung war inbegriffen, dass der Schatzmeister, als Vorstandsmitglied auch Mitglied des Verwaltungsausschusses sein soll.

Für die anderen beiden Punkte akzeptierte der Beirat der Empfehlung des Vorsitzenden, noch einmal mit der Post zu stimmen, auf Grund der neuer Regel N. Diese postalische Abstimmung war in zwei Wahlgängen (IBG Bulletin Nr. 54 und 55) durchgeführt worden und ist jetzt abgeschlossen. Das Ergebnis der Abstimmung war im Falle des stellvertretenden Generalsekretärs ganz klar: er wird in Hinkunft Mitglied des Verwaltungsausschusses sein.

Eine Mehrheit fand sich auch für die Erweiterung des Verwaltungsausschusses durch die Aufnahme zweier Altpräsidenten, sowohl in der Abstimmung von Edmon-ton 1978, als auch in der Abstimmung von 1980. In letzterer ist jedoch keine 2/3-Mehrheit erreicht worden. Weil sich aber bei der früheren Abstimmung von 1978 eine sehr grosse Mehrheit (ungefähr 95%) für die Erweiterung des Verwaltungsausschusses an sich ausgesprochen hatte, empfahl das Satzungskomitee, durch eine Mehrheitsentscheid und auf Grund der Regel G3, dass die Entscheidung der Mitglieder – Erweiterung des Verwaltungsausschusses – durch Aufnahme der drei Altpräsidenten in den Verwaltungsausschuss verwirklicht werden soll.

Rom, April 1980,  
Dr. E.G. Hallsworth,  
Vorsitzender IBG Satzungskomitee.

Diese Empfehlung des Satzungskomitees ist später durch den Verwaltungsausschuss in seiner früheren Zusammensetzung akzeptiert worden, wiederum durch eine Mehrheit entscheid. Die betreffenden Texte sind bereits in die neue Satzung der Gesellschaft, wie sie im Juni 1980 gedruckt wurde, eingeschaltet worden.

Der Generalsekretär.



ISSS-AISS-IBG

At last, the Emblem of the Society!  
*Finalemment, l'emblème de l'Association!*  
Endlich, das Emblem der Gesellschaft!

#### REPRESENTATIONS/VERTRETUNGEN

The President and the Secretary-General participated in an Expert Meeting on a 'World Soils Policy' in Rome, from 4th to 6th March 1980 (see this Bulletin). The Chairman of Commission V and the Secretary-General represented the Society at a Consultation on an International Reference Basis for Soil Classification in Sofia, from 5th to 8th May 1980 (see this Bulletin).

Le Président et le Secrétaire-Général participaient à une Réunion des experts sur un 'Plan-de-conduite mondial des sols' à Rome, du 4 au 6 mars 1980 (cf. ce Bulletin). Le Président de la Commission V et le Secrétaire-Général représentaient la Société à une Consultation sur une Base de Référence Internationale pour la Classification des Sols à Sofia, du 5 au 8 mai 1980 (cf. ce Bulletin).

Der Präsident und der Generalsekretär beteiligten sich an einer Expertentagung über 'Weltverhaltensregeln gegenüber Böden' in Rom, von 4. bis zum 6. März 1980 (siehe dieses Mitteilungsblatt). Der Vorsitzende der Kommission V und der Generalsekretär vertraten die Gesellschaft bei einer Beratung über Grundlagen internationaler Zusammenarbeit in der Bodenklassifikation in Sofia, von 5. bis zum 8. Mai 1980 (siehe dieses Mitteilungsblatt).

RECEIPTS AND PAYMENTS ACCOUNT for the period 1 January–31 December 1979 (Treasury and Secretariat General)

Receipts	US dollars	Payments	US dollars
Advanced operational expenses (1)	8,240.38	Secretarial assistance	839.21
Balance brought forward on January 1979 (2)	12,327.70	Travel and representation	2,009.41
Interest savings account (3)	881.98	Subventions (6)	15,000.00
Balance secretariat Wageningen brought forward on January 1979	1,055.91	Printing	15,179.88
Services publication Edmonton Congress	10,079.32	Purchase of publications	1,888.83
Membership fees	21,842.58	Bankcharges	312.29
Subscriptions	418.61	Equipment and supplies	8,544.98
Advertisements	1,073.47	Postal and telephone charges	8,406.79
Sale of publications	77.43	Advances to secretary-general	1,000.00
Bank interests	80.73		53,181.39
Grants (4)	15,000.00	Balance carried forward:	
		cash in bank (7)	25,271.72
Subventions (5)	15,375.00	deposit with savings account	8,000.00
	<hr/>		<hr/>
	86,453.11		86,453.11

(1) Amount transferred by R. Dudal, former treasurer ISSS (see account 1978)

(2) Amount transferred on 13 February 1979 (see account 1978)

(3) Interest accrued on the ISSS savings account during 1978, transferred on 18th May 1979 (see account 1978)

(4) Contribution by Dutch Soil Survey Institute 'Stiboka' for 1978 and 1979

(5) Contribution by Research Division, Dutch Ministry of Agriculture, and Agricultural University Wageningen

(6) Payment to ISM/ITC for 1979 administrative support to secretariat.

(7) US dollars, Belgian francs, Dutch guilders and other foreign currencies (secretary-general and treasurer accounts)

RELEVÉ DE RECETTES ET DÉPENSES pour la période du 1 janvier au 31 décembre 1979 (Trésorerie et Secrétariat général)

Recettes	US dollars	Dépenses	US dollars
Avances au trésorier (1)	8,240,38	Aide secrétariel	839,21
Bilan au 1 janvier 1978 (2)	12,327,70	Représentation et déplacement	2,009,41
Intérêt du compte d'épargne (3)	881,98	Subventions (6)	15,000,00
Bilan du secrétariat Wageningen au 1 janvier 1979	1,055,91	Impression	15,179,88
Services publication Congress Edmonton	10,079,32	Achat de publications	1,888,83
Cotisation des membres	21,842,58	Frais bancaires	312,29
Souscriptions	418,61	Équipement et fournitures	8,544,98
Réclames	1,073,47	Frais postaux et téléphones	8,406,79
Vente de publications	77,43	Avances au secrétaire-général	1,000,00
Intérêts bancaires	80,73		53,181,39
Allocations (4)	15,000,00	Solde créditeur:	
Subventions (5)	15,375,00	avoir de banquet (7)	25,271,72
	<hr/>	dépôt au compte d'épargne	8,000,00
	86,453,11		<hr/>
			86,453,11

(1) Montant transféré par R. Dudal, ancien trésorier AISS (voir bilan 1978)

(2) Montant transféré au 13 février 1979 (voir bilan 1978)

(3) Intérêt cumulé du compte d'épargne de l'AISS durant 1978, transféré le 18 mai 1979 (voir bilan 1978)

(4) Contribution de l'Institut de Cartographie des Sols 'Stiboka' pour 1978 et 1979

(5) Contribution du Département de la Recherche, Ministère de l'Agriculture des Pays Bas et de l'Université Agronomique à Wageningen

(6) Dépenses à l'ISM/ITC comme support administratif au secrétariat pour 1979

(7) Dollars, francs, florins, marks, etc...

**EINNAHMEN-AUSGABEN RECHNUNG für den Zeitraum 1. Januar – 31. Dezember 1979 (Kassenverwaltung und Generalsekretariat)**

<b>Einnahmen</b>	<b>US dollars</b>	<b>Ausgaben</b>	<b>US dollars</b>
Vorschuss zum Schatzmeister (1)	8.240,38	Aushilfe Sekretariat	839,21
Saldo am 1 Januar 1979 (2)	12.327,70	Reisen und Representation	2.009,41
Zinsen von Spareinlage (3)	881,98	Subventionen (6)	15.000,00
Saldo von Sekretariat Wageningen am 1 Januar 1979	1.005,91	Druckkosten	15.179,88
Dienst Publikation Edmonton Kongress	10.079,32	Erwerb von Publikationen	1.888,83
Mitgliedsbeiträge	21.842,58	Bankgebühren	312,29
Subskriptionen	418,61	Ausrüstung und Versorgungsgüter	8.544,98
Anzeigen	1.073,47	Post und Telephonegebühren	8.406,79
Verkauf von Publikationen	77,43	Vorschuss zum Generalsekretariat	1.000,00
Bankzinsen	80,73		53.181,39
Spenden (4)	15.000,00	Saldo:	
Subventionen (5)	15.375,00	Bankguthaben (7)	25.271,72
		Anlage bei Spareinlage	8.000,00
	<hr/>		<hr/>
	86.453,11		86.453,11

(1) Dieser Beitrag wurde bei R. Dudal übertragen (Rechnung 1978)

(2) Dieser Beitrag wurde am 13 Februar 1979 bei R. Dudal übertragen (Rechnung 1978)

(3) Aufgelaufene Zinsen der IBG Spareinlage während 1978, übertragen am 18 Mai 1979

(4) Beiträge Institut für Bodenkartographie 'Stiboka' für 1978 and 1979

(5) Beiträge Departement für Nächforschung, Ministerium für Landwirtschaft der Niederlanden, und Universität für Landwirtschaft, Wageningen

(6) Ausgabe am ISM/ITC für Aushilfe Secretariat während 1979

(7) Dollars, Franken, Gulden, Marken, etc.

**CORRECTIONS AND ADDITIONS TO THE LIST OF OFFICERS OF ISSS COMMISSIONS AND SUBCOMMISSIONS (cf. Bulletin no. 54).**

**CORRECTIONS ET ADDITIONS A LA LISTE DES BUREAUX DES COMMISSIONS ET SOUSCOMMISSIONS (voir Bulletin no. 54).**

**KORREKTUREN UND BEFÜGUNGEN ZU DER LISTE DER VORSTÄNDE DER KOMMISSIONEN UND SUBKOMMISSIONEN (vergl. Mitteilungen No. 54).**

**1st Vice Chairman Commission III, Soil Biology/1er Vice-Président Commission III, Biologie du sol/len stellvertretenden Vorsitzender Kommission III, Bodenbiologie:**

Dr. I. Watanabe, The International Rice Research Institute, P. O. Box 933, Manila, Philippines.

**3rd Vice Chairman Subcommittee on Salt affected soils/3me Vice-Président Sous-Commission des Sols salins/3ter stellvertretenden Vorsitzender Subcommittee Salzböden:**

Dr. J. S. P. Yadav, Central Soil Salinity Research Institute, Karnal-132001, Haryana, India.

**3rd Vice Chairman Subcommittee on Soil Micromorphology/3me Vice-Président Sous-Commission de Micromorphologie du sol/3ter stellvertretenden Vorsitzender Subcommittee Bodenmikromorphologie:**

Dr. Jawahar L. Sehgal, Associate Professor Soils (Pedology), Punjab Agricultural University, Ludhiana, Punjab, India.





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# SOIL SCIENCE

*An International Journal for Soil-Plant Research*

Editor: John C. F. Tedrow

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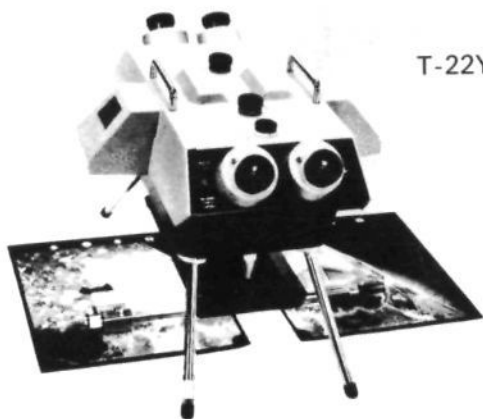
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