bulletin

of the international society of soil science

bulletin

de l'association internationale de la science du sol

mitteilungen

der internationalen bodenkundlichen gesellschaft

No. 55 1979/1

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

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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 Planzenernährung
Dr. C. Hera, Academia de Stiinte Agric. si Silvice, Bd Marasti 61 Bucaresti, 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

Subcommissions/Sous-Commissions/Subkommissionen - Chairmen/Présidents/Vorsitzenden

A. Salt affected soils/Sols salins/Salzböden
Prof. Dr. I. Szabolcs, Director, Research Institute for Soil Science, Hermann Ottó út 15, Budapest 11, Hungary

B. Micromorphology/Micromorphologie/Mikromorphologie
Dr. P. Bullock, Rothamsted Experimental Station, Harpenden Herts, AL5-27Q, U.K.

CALL FOR VOTING

The voting on the pending issues of the Rules of the ISSS, as requested in the previous Bulletin (no 54) has been disappointingly small. This may have been due to the fact that the announcement was printed in an inconspicuous place and a reluctance to cut out parts of pages.

Therefore, at the suggestion of the Committee of Rules, all members are urged to vote, or vote again, on the two issues listed below. They should indicate their name and address on the back of the envelop containing this completed voting sheet, which should reach the Secretary-General by the 31 of December 1979 at the latest.

APPEL AU VOTE

La participation au scrutin relatif aux modifications du Règlement de l'AISS sollicité dans le Bulletin précédent (no. 54) a été assez décevante. Il est possible que ceci soit dû au fait que l'annonce du vote était imprimée d'une façon qui ne sautait pas aux jeux, et que certains apprependaient de découper la demie page concernée.

Par conséquent le Comité du Règlement a suggeré qu'un appel soit fait à tous les membres pour voter, ou pour voter à nouveau, au sujet des deux points mentionnés ci-dessous. Il est recommendé qu'ils indiquent leur nom et adresse au verse de l'enveloppe contenant le bulletin de vote dûment rempli. Celui-ci doit parvenir au Secrétaire Général avant le 31 décembre 1979.

AUFFORDERUNG ZU STIMMABGABE

Die Stimmabgabe zu den offenen Punkten der IBG-Satzung, zu der im vorhergehenden Bulletin (No. 54) aufgefordert wurde, war enttäuschendlich gering. Das mag auf die Veröffentlichung an unzugänglicher Stelle oder ein Zögern zurückzuführen sein, etwas aus dem Bulletin herauszuschneiden.

Daher werden die Mitglieder auf Vorschlag des Satzungskomitee erneut aufgefordert, über die beiden unten aufgeführten Punkte abzustimmen bzw. wieder abzustimmen. Sie sollten ihren Namen und ihre Anschrift auf die Rückseite des Umschlages schreiben, der den ausgefüllten Stimmelzettel enthält, und diesen spätestens bis zum 31 Dezember 1979 an den Generalsekretär schicken.

Three Past-Presidents/Trois Ancien-Présidents/Drei Altpräsidenten ☐
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Secrétaire-général adjoint ne doit pas faire partie du Comité exécutif/ ☐
Stellvertr. Generalsekretär sollte kein Vorstandsmitglied sein

Please send to/Veuillez envoyer à/Bitte senden Sie an: Secretary General ISSS, P.O. Box 353, Wageningen, the Netherlands.

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Association Internationale de la Science du Sol (AISS)
Internationale Bodenkundliche Gesellschaft (IBG)

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- *Veuillez 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.

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Previous country of residence
Ancien pays de domicile . . . . . .
Der voriger Landesort

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* 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 professionels 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 Travails. 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 zukunftlicher 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 interessé 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/ Bodenfrüchtbarkeit 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 Hydromorfen Böden (Com. V)
DP Soil Information Systems/Informatique en Pédologie/Informationssysteme in der Bodenk. (Com. V)
RS Remote Sensing and Soil Surveys/Pédologie et Télédétection/Fernerkundung und 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)
CS Soil Colloid Surfaces/Surfaces des Colloides de Sol/Bodencolloidale Oberfläche (Com. VII)

Preferred Language / Langue préférée / gewünschte Sprache
☐ English ☐ Français ☐ Deutsch

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

PRINCIPLES AND PRACTISES FOR RECLAMATION OF SALT AFFECTED SOILS

Central Soil Salinity Research Institute, Karnal, India, 18–21 February, 1980.

Meeting of the Subcommission on Salt Affected Soils of the International Society of Soil Science, organised by the Indian Council of Agricultural Research.

Purpose

The purpose of the Symposium is the presentation and discussion of the latest achievements of research and practice in the field of salt affected soils. It also aims to promote exchange of ideas and information among the scientists as well as to contribute to the realisation of results in practice with a view to utilising the salt affected soils for crop production.

The following topics will be discussed:

1. NATURE
   - Survey procedures, distribution and mapping
   - Characteristics: (a) Physical, (b) Chemical, (c) Biological
   - Classification: (a) Genetical, (b) Reclaimability and Manageability
   - Genesis with particular reference to origin of sodic soils

2. PRINCIPLES
   - Salt and water transport under irrigated and unirrigated conditions
   - Soil properties in relation to exchangeable sodium and electrolytes
   - Water table and ground water quality in relation to soil salinization
   - Drainage in relation to soil salinity
   - Plant responses to and breeding for salinity and sodicity stresses
   - Nutrient transformations and interaction

3. RECLAMATION AND MANAGEMENT
   - Amendments
   - Crops and varieties
   - Agronomic, cultural and fertilizer practices
   - Water Management
   - Engineering aspects including drainage

Venue & Tour:

Karnal is a District headquarter and in situated about 120 km (75 miles) north of Delhi on National Highway No. 1.

A tour will be conducted after the Symposium from February 22, 1980 to February 26, 1980 and will include visits to Ludhiana, Chandigarh, Hissar, Delhi and Agra.

Papers & Proceedings:

The papers to be presented at the Symposium will be in English only. It is intended to print the papers before the Symposium. In connection with this, the final date for submission of manuscripts has already passed (June 1st 1979).

Registration and Information:

The registration fee is U.S. dollars $ 50.–. This includes a copy of the publication containing the full papers. Tour expenses are separate.

The *address* is: Dr. J. S. P. Yadav, Director, Central Soil Salinity Research Institute, Karnal – 132001, Haryana, India.

International Symposium on

SOIL INFORMATION SYSTEMS, REMOTE SENSING AND SOIL SURVEY

Purdue University, West Lafayette, Indiana, USA, 3–7 June 1980.
(in conjunction with the Purdue Symposium on Machine Processing of Remotely Sensed Data)

Sponsored by:
The International Society of Soil Science, Working Group on Soil Information Systems and Working Group on Remote Sensing and Soil Survey,
Purdue University, Agricultural Experiment Station and the Laboratory for Applications of Remote Sensing,
and several U.S. Societies and Services.

Provisional agenda

Plenary session (Day 1)
- Current and Future Needs for Soil Information, a Global Perspective
- Current and Future Data Acquisition Systems
- Current and Future Data Analysis Systems
- Data Bases Designed to Meet Information Needs of the Future
- Current Soil Information Systems
- Remote Sensing and Soil Survey

Concurrent sessions (Day 2 & 3)
- Measurements
- Data Analysis
- Soil Information Systems
- Remote Sensing and Soil Survey

Field trips (Day 4)
- Jasper County, Indiana and Ford County, Illinois (Remote Sensing and Soil Survey)
- County Terminal (Soil Information Systems)
- LARS

Information: Dr. M. F. Baumgardner, L.A.R.S., 1220 Potter Drive, W. Lafayette, IN 47906, USA.

Advance information on

SECOND AUSTRALIAN WORKSHOP ON INFORMATION SYSTEMS FOR SOIL AND RELATED DATA

Canberra A. C. T., Australia, from 19 to 21 February 1980.

General

This workshop is being arranged under the aegis of the Working Group on Soil Information Systems of Commission V of the International Society of Soil Science, through the Australian Soil Science Society.

The first Workshop on Information Systems for Soil and Related Data, held in Canberra in March 1976, was successful in bringing together 25 people from Australia and nearby countries who were involved or interested in developing or using information systems for soil or related natural resource data. The proceedings of the Workshop were published as: 'Uses of Soil Information Systems', Eds Alan W. Moore and Stein W. Bie, PUDOC, Wageningen, 1977.

A Second Workshop will be held in Canberra in February 1980 to examine developments in new and existing soil information systems, user experience with such systems and relevant developments in information system technology. It is expected to attract a larger group of participants than the first Workshop.

Venue

The Workshop will be held at the Australian National University and out-of-town participants accommodated at Ursula College. Further details will be given in November 1979 or earlier.

Participation

Attendance at the Workshop will be limited to 40 participants. Preference will be given to those actually using or developing information systems for soil or related data, and to those prepared to contribute a paper to the Workshop.

The Workshop will be financially self-supporting. A registration fee of approximately $ 60 will be charged to cover hire of venue, publication costs, morning and afternoon teas and a Workshop Dinner. Each participant will receive a copy of the Workshop Proceedings upon publication.

Papers

It is proposed that papers be pre-circulated to participants. At the Workshop, approximately an hour, equally divided between presentation and discussion, will be devoted to each paper. Facilities will be arranged for the display of posters throughout the period of the Workshop. It is expected that some computer demonstrations will be arranged for the final day.

Offers of posters for display throughout the Workshop and suggestions for participatory computer demonstrations on the final day of the Workshop are sought.

Proceedings

Offers of papers are invited from intending participants. It is anticipated that the Proceedings of the Second Workshop will be published by PUDOC in similar format to the Proceedings of the First Workshop. Intending authors should forward an abstract of approximately 100 words.

Information: Dr. A. W. Moore, Organising Committee Workshop
Soil Information Systems, CSIRO Division of Soils – the Cunningham Laboratory, Mill Road, St. Lucia, QLD 4047, Australia.

Advance Notice of

IUFRO/ISSS WORKSHOP ON LAND EVALUATION FOR FORESTRY

Wageningen, The Netherlands, October 1980.

Meeting of the International Union of Forest Research Institutes, Project Group on Land Classification (IUFRO-P1.02); the International Society of Soil Science, Working Group on Land Evaluation (ISSS-LE); with the support of the Food and Agriculture Organization of the United Nations (FAO).

Aims and Scope

Evaluation of land for forestry must be based on sound information on the land resources, on the objectives of forest enterprises and on the land requirements of their management systems.

Intensive studies have long been made of land conditions in relation to the choice of tree species and to the estimates of yields. Site classification for forestry is well advanced. Only recently, however, have land conditions been studied in relation to management, while very little work has been done on such matters as the influence of size and shape of the forest enterprises on the cost of fire control, the cost of endemic disease control, and the cost of multiple functions, including agro-forestry. Different groups of researchers are engaged in land classification, soil survey interpretation, site classification, and terrain classification for forestry, but little attention has been given to a framework within which these studies could be integrated – a framework that could also cover the problems of environmental control.

The aim of the IUFRO/ISSS meeting, which will have a workshop character, is to discuss methods of integration and to develop recommendations that will lead to a framework for land evaluation in forestry. The multidisciplinary methods of land evaluation developed in recent years by the Land and Water Development Division of FAO are expected to provide the background to these discussions.

A detailed programme of the meeting will be presented in the next ISSS Bulletin.

ISSS members interested in participating and in presenting technical papers are requested to write to:

Dr. K. J. Beek, Chairman, ISSS Working Group on Land Evaluation,
International Institute for Land Reclamation and Improvement (ILRI),
P.O. Box 45, 6700 AA Wageningen, The Netherlands

or to:

Ir. C. P. van Goor, IUFRO Project Group P1.02 'Land Classification'
Dorschkamp Research Institute for Forestry and Landscape Planning,
Bosrandweg 20 – P.O. Box 23, 6700 AA Wageningen, The Netherlands

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PROFILE OF THE NEW PRESIDENT
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PROFIL DES NEUEN PRÄSIDENTEN

PROF. DR. J. J. KANWAR, M.Sc. (Agri), Ph.D. (Soils), FNA, New President of the International Society of Soil Science, 1978–1982.

Prof. Kanwar was born in Punjab on December 10, 1922, graduated in Agriculture in 1944 from Punjab Agricultural College, Lyallpur and was awarded a Colombo Plan Research Fellowship for Ph.D. in Soil Science from Australia. He served with distinction on the agriculture faculty of the now Punjab Agriculture University, Ludhiana, for 22 years and held the position of Professor of Soil Science till 1962 and Director, Research from 1962 to 1966. From 1966 to 1973 he served as the first Deputy Director General (Soil, Agronomy, Engineering) in the reorganised Indian Council of Agricultural Research when it became an apex body for agricultural research and education in India. Since 1973 he is working as Associate Director, International Crops Research Institute for the Semi- Arid Tropics (ICRISAT), at Hyderabad.

For his outstanding work in soil science, Prof. Kanwar was the first soil scientist in India to be awarded the Rafi Ahmed Kidwai Memorial Prize in 1965. He received the Borlaug Award in 1978 and was elected Fellow of the Indian National Science Academy in 1975 and Honorary Member, Indian Soil Science Society in 1977. A few other positions of distinction held by him are:

President, Indian Society of Soil Science, 1970–72; President, International Symposium on Soil Fertility Evaluation, New Delhi, 1971; President, FAO/UNDP Seminar on Soil Survey & Soil Fertility, 1971; President, Arid Zone Workers Association, 1969–72; Chairman, Inter-Governmental Working Group on Soil Degradation organised by FAO at Rome under the aegis of UN Committee on Human Environments; Vice-Chairman, Commission VI, International Society of Soil Science, 1964–68 and 1969–74; Member, Advisory Committee of UNESCO on Natural Resources, 1976, 1969 & 1971; Consultant to Asian Development Bank, Manila, 1973; Consultant to FAO on Water Management in Sri Lanka, 1973; Consultant to UNDP on Rainfed Agriculture in Indonesia, 1979; Member, Indian National 'Man and Biosphere' Committee of the National Committee on Environmental Planning and Coordination.

12TH INTERNATIONAL CONGRESS OF SOIL SCIENCE

New Delhi, India, February 8–16, 1982

FIRST ANNOUNCEMENT

The Indian Society of Soil Science announces with pleasure the holding of the 12th International Congress of Soil Science, New Delhi, India during February 8–16, 1982. This Twelfth ISSS Congress, sponsored by the Indian Society of Soil Science with the concurrence of the Government of India, will have financial support from the Indian Council of Agricultural Research, an apex body of organization in India for research in agriculture, including animal sciences.

The Congress Theme is 'Managing Soil Resources to meet Challenge to Mankind'.

Plenary Sessions

A few lectures by specialists of international standing will be arranged to focus attention on the present status and future possibilities of optimizing crop production and land use in the (i) arid, (ii) semi-arid and (iii) humid tropics. It is also proposed to hold a panel discussion on 'Future of Soil Science' where leading scientists from each of the seven commissions will be invited to discuss how their specialised fields could, in future, contribute to a better understanding and utilization of soils for the benefit of mankind.

Symposia

Symposia on the following topics will be organized:

1. Vertisols
2. Submerged rice soils
3. Organic manuring in the tropics and subtropics – potentialities and limitations
4. Non-symbiotic nitrogen fixation

Papers for the symposia will be invitational and limited to 5 to 7 speakers for each topic.

Commission Meetings

The following themes are suggested for the contributory papers to different Commission and Subcommission meetings.

Themes	*(Sub) Commissions*
1. Water and solute movement in soils	I, II
2. Soil temperature as an edaphic factor	I
3. Soil water balance	I
4. Soil physical environment and growth of roots and other underground plant parts	I
5. Chemistry and plant availability of micronutrients in soils	II, IV
6. Toxic elements in the soil environment	II, IV
7. Characterizing soil solution	II, I, A
8. Organo-metallic complexes	II
9. Chemistry of acid soils	II
10. Nature and properties of soil colloid surfaces	II, VII
11. Biological nitrogen fixation	III
12. Dynamics of organic matter in the tropics	III, II
13. Microbial processes in the rhizosphere	III, IV
14. Agrochemicals and soil organisms	III, II, IV
15. Utilization of urban and industrial wastes and crop residues	III, IV, VI
16. Techniques in soil testing and plant analysis	IV, II
17. Nitrogen economy for crop production in the tropics	IV
18. Nutrient requirements under limited and adequate water supply	IV, I
19. Nutrient changes under different cropping systems and soil management practices	IV
20. Fertilizer requirements of oil seed, grain legume and plantation crops	IV

21.	Fertilizer use and quality of produce	IV
22.	Genesis and classification of major soils of tropics and subtropics	V
23.	Secondary formations in soils	V, II, B
24.	Soil maps – Intensity of survey, scale of mapping and interpretation	V
25.	Micromorphological techniques	B
26.	Utilization of soil survey data for integrated watershed development case studies	V, VI
27.	Managing problem soils for increased production: a) Sandy soils b) Calcareous soils c) Gypsiferous soils d) Acid ferralitic soils e) Organic soils	VI
28.	Watershed management for sediment and flood control	VI, I
29.	Water quality and soil productivity	VI, I, II
30.	Water use technology in rainfed agriculture	VI, I
31.	Characterisation and quantification of soil minerals	VII
32.	Mineralogy of soils and nutrient behaviour	VII, II, IV
33.	Amorphous and non-silicate constituents of soils	VII, V
34.	Genesis and transformations of soil minerals	VII, V, B

Note: Some Comission sessions will be available to accommodate papers submitted on topics of general interest.

Submission and Presentation of Papers

In accordance with ISSS policy, the total number of papers accepted for presentation at the plenary sessions, commission meetings and poster sessions will be limited to 400.

The authors are required to indicate the intent to participate and contribute papers before January 1, 1981.

Transactions

It is proposed to publish papers presented at plenary sessions and the symposia papers in full while for papers accepted for presentation in Commissions and at poster sessions, only the abstracts will be published. In case all the accepted papers to be presented at the Commissions are received in time and there is a demand for full publication of these articles, the Organizing Committee will examine the matter at the appropriate time. Authors will be responsible for providing abstracts of the paper in three official languages of the Society (English, French and German).

Poster Sessions

Facilities will be available for a limited number of participants to make presentation in poster sessions. Authors intending to make presentation in the poster sessions should indicate so while communicating the papers. The authors will be responsible for the preparation of the posters according to the general guidelines which will be laid down by the organizers of the Congress.

General Guidelines

1. Only members of the ISSS are eligible for the presentation of papers.
2. Each scientist may submit only one paper as first author and not more than one paper as joint author, other than first.
3. Each paper should be accompanied by an abstract written in three official languages of ISSS (English, French and German)
4. One of the authors must present the paper.
5. A total of 25 minutes will be allotted for each paper including 15 minutes for presentation and 10 minutes for discussion.
6. The Organizing Committee reserves the right to select and edit all submissions and abstracts.

Detailed instructions for preparation and submission of the manuscripts and poster sessions, etc. will be included in the second circular to be published in the Bulletin of the ISSS.

Special Interest and Working Groups

The Organizing Committee for the 12th ISSS Congress is anxious to accommodate special interest and working groups that may wish to have meetings during the Congress. There are Sub-Commissions on Salt Affected Soils and Soil Micromorphology and eleven Working Groups of the Society. In addition, some of the Commissions may wish to have business or other special meetings at times other than those in the program for presentation of papers. Chairmen of the groups wishing to have time and accommodation reserved for such purposes are requested to write to the Organising Secretary, indicating approximate number of individuals likely to be involved and special arrangements needed. We expect every group to arrange its own agenda.

Tours

India is a sub-continent with a wide range of climate, soils, and crops. In fact it represents tropical, sub-tropical, temperate, arid, semi-arid, humid and sub-humid regions. India is also a land of tourist treasures: temples, palaces, forts, and magnificent scenery. The six post-congress tours have been planned to offer the participants a cross-section of landscape, soils and crops, soil, crop and water management research in India as well as places of tourist interest.

All tours will commence on February 17, 1982 and terminate at a city where international flights are operating. The cost is calculated for a single person and includes transportation by air/road, board and lodging and tour guide books. The cost is approximate and likely to vary by 20 to 30 per cent.

Post-Congress Tour No. 1
Duration: Eight days (February 17–24, 1982)
Anticipated Cost: U.S. $ 375.–
Route: Delhi/Hissar/Karnal/Chandigarh/Simla/Nangal/Ludhiana/Amritsar/Delhi (all by road)
Highlights: Study of landscapes, soils (Fluvisols, Cambisols, Solonetz, Solonchaks, Sierozems, Luvisols), cropping patterns, tube-well/canal irrigation in the Indo-Gangetic alluvial plains of Haryana and Punjab and sub-mountane and mountane regions; visit to Agricultural Universities at Hissar and Ludhiana, Research Institutes at Karnal, Chandigarh, Simla and Amritsar; visit to fertilizer factory, Bhakra Dam; visit to Pinjore Gardens of Mughal times and Golden Temple at Amritsar.
Visit to Kashmir: Separate arrangements for those desirous of visiting Kashmir (by air) could be made after the termination of tour at Amritsar or Delhi. The cost will be additional.

Post-Congress Tour No. 2
Duration: Seven days (February 17–23, 1982)
Anticipated Cost: U.S. $ 300.–
Route: Delhi/Roorkee/Dehra Dun/Mussooire/Pant Nagar/Nainital/Delhi (all by road)
Highlights: Study of landscapes, soils (Luvisols, Fluvisols, Cambisols, Solonchaks, Mollisols), cropping patterns and different land utilization types in the Indo-Gangetic Plains, sub-mountane and mountane areas including Tarai lands; visit to Agricultural University at Pant Nagar, Research Institutions of irrigation, soil conservation, forestry, aerial photo-interpretation; sightseeing Mussoorie and Nainital hill stations, famous Haridwar pilgrimage, sulphur springs near Dehra Dun.

Post-Congress Tour No. 3
Duration: Eight days (February 17–24, 1982)
Anticipated Cost: U.S. $ 475.00.–
Route: Delhi/Jaipur/Jodhpur/Udaipur/Aurangabad/Bombay (all by air)
Highlights: Study of landscapes, soils (Sierozems, Psamments (Arenosols), Vertisols, Aridisols (Yermosols)), agriculture and other land uses in semi-desert and desert regions and semi-arid Deccan plateau; visit to the Agricultural University and Central Arid Zone Research Institute, Jodhpur, sightseeing at Jaipur and Jodhpur, Ajanta and Ellora caves at Aurangebad and cosmopolitan city of Bombay.

Post-Congress Tour No. 4
Duration: Seven days (February 17–23, 1982)
Anticipated Cost: U.S. $ 450.–
Route: Delhi/Khajuraho/Varanasi/Ranchi/Calcutta (all by air)
Highlights: Study of landscapes, soils (Luvisols, Cambisols, rhodic Alfisols, Lateritic soils, Solonchaks, Gleysols), agriculture and land use patterns in rolling Bundelkhand plains, Indo-Gangetic alluvial plains and Chhota Nagpur plateau; visit to Agricultural Universities at Varansi and Ranchi; sightseeing will cover famous sculptures at Khajuraho temples, temples along Ganges at Varanasi, local visits to Calcutta.

Post-Congress Tour No. 5
Duration: Seven days (February 17–23, 1982)
Anticipated Cost: U.S. $ 540.–
Route: Delhi/Nagpur/Hyderabad/Bhubaneswar/Calcutta (all by air)
Highlights: Study of landscapes, soils (Vertisols, Luvisols, Lateritic soils, Fluvisols, Solonchaks, Gleysols) and land use patterns in the Deccan plateau, rolling eastern plains, terraced paddy cultivation; visit to Agricultural Universities at Hyderabad and Bhubaneswar and research stations including International Crops Research Institute for Semi-Arid Tropics (Hyderabad); sightseeing at Hyderabad, Konarak and Puri temples, eastern sea coast and cosmopolitan city of Calcutta.

Post-Congress Tour No. 6
Duration: Nine days (February 17–25, 1982)
Anticipated Cost: U.S. $ 725.–
Route: Delhi/Hyderabad/Bangalore/Mysore/Coimbatore/Ooctacamund/Trivandrum/Cape Comorin/Madras (by air and by road)
Highlights: Study of landscapes, soils (Vertisols, Lateritic soils, rhodic Alfisols, Acid Sulphate soils (thionic Fluvisols)),agriculture and land use patterns in Deccan plateau, western hilly regions including tea and rice cultivation in coastal estuaries; visit to Agricultural Universities at Hyderabad and Coimbatore, Research Institutes on sugarcane, millets, temperate fruits, soil conservation including International Crops Research Institute for the Semi-Arid Tropics (Hyderabad); sightseeing at Hyderabad, Bangalore, Palaces and Brindavan Gardens at Mysore, famous Kovalam Beach on the Western Coast, Cape-Comorin (southern tip of India) and city of Madras.

Local Tours in Delhi
Local tours of half day and full day are regularly available by taxi, tourist coach, etc. This can be arranged at a notice of one day in advance. The cost will be approximately U.S. $ 5.– for half day and U.S. $ 10.– for a full day tour respectively.

Tour to Agra
One day trip to Agra on a break day during the Congress session could be arranged. The participants will visit famous Taj Mahal, Red Fort and other historical places in and around Agra which is about 200 km. from Delhi. Cost will be approximately U.S. $ 50.–.

Notes:
1. Only a limited number of delegates can be accommodated on each tour.
2. Preference for the limited number of seats for each tour will go to those who indicate their preference by returning the Notice of Intent after marking the order of preference.
3. If adequate number of registrations is not available for any one of these planned tours, the same will be cancelled.

Registration (registration fee is not refundable)

Registration fee per participant	U.S. $ 125.–
(the participant will receive a set of Transactions free of cost)	
Registration fee for accompanying wife	U.S. $ 50.–

Accommodation

Accomodation will be arranged in hotels. The charges are varying. Accomodation in a reasonably good hotel will cost around U.S. $ 30.– to 40.– per day. However, this is a very approximate costing. In the second announcement, the different hotels, types of accommodation, facilities in the hotels and the rates will be indicated for the intending delegates. Participants can give their choice at the time of sending the registration fee.

Important Deadlines

First Notice of Intent	August 1, 1980
Final Notice of Intent	July 1, 1981
Submission of abstract along with full paper	January 1, 1981
Receipt of registration fee from authors of accepted papers	April 20, 1981

CORRESPONDENCE TO: **Dr. T. D. Biswas, Organizing Secretary**
12th International Society of Soil Science Congress
Division of Soil Science & Agricultural Chemistry
Indian Agricultural Research Institute
NEW DELHI: 110 012, India.

12ÈME CONGRÈS INTERNATIONAL DE LA SCIENCE DU SOL

New Delhi, Inde, Février 8–16, 1982

PREMIERE CIRCULAIRE

L'Association de la Science du Sol de l'Inde a le plaisir de vous annoncer que le 12ème Congrès de la Science du Sol se tiendra à New Delhi, Inde, du 8 au 16 février 1982. Ce 12ème Congrès de l'AISS, placé sous les auspices de Association Indienne de la Science du Sol avec la collaboration du Gouvernement de l'Inde, bénéficiera de l'appui financier du Conseil Indien pour la Recherche Agricole, organisation principale en Inde pour la Recherche en Agriculture, y compris les sciences animales.

Thème du Congrès: 'Aménagement des Ressources en Sol pour faire face au défi de l'humanité'

Séances plénières

Quelques exposés, par des spécialistes de renommée internationale, seront organisés dans le but d'attirer l'attention sur l'état actuel et les possibilités futures de l'optimisation des productions et de l'utilisation des terres dans les tropiques (i) arides, (ii) semi-arides et (iii) humides. Il est également proposé d'organiser un débat sur 'L'avenir de la Science du Sol' où d'éminents spécialistes de chacune des sept commissions seront invités à discuter des contributions futures possibles de leurs diverses spécialités, à une meilleure compréhension de l'utilisation des sols pour le bénéfice de l'humanité.

Symposiums

Des symposiums seront organisés sur les thèmes suivants:

1. Les Vertisols
2. Les rizières submergées
3. Les fumures organiques dans les tropiques et les subtropiques – possibilités et limitations
4. La fixation de l'azote non-symbiotique.

Les communications pour les symposiums seront faites sur invitation et seront limitées de 5 à 7 conférences pour chaque thème.

Reunions des Commissions

Les thèmes suivants sont suggérés comme sujet des communications dans les diverses Commissions et Sous-commissions.

Thèmes	*(Sous) Commissions*
1. Mouvement de l'eau et des matières en solution dans le sol	I, II
2. Température du sol comme facteur édaphique	I
3. Bilan sol et eau	I
4. Environnement physique du sol et croissance des racines et autres parties souterraines des plantes	I
5. Chimie et disponibilité aux plantes des micro-éléments nutritifs dans le sol	II, IV
6. Eléments toxiques dans l'environnement du sol	II, IV
7. Caractérisation des solutions du sol	II, I, A
8. Complexes organo-métalliques	II
9. Chimie des sols acides	II
10. Nature et propriétés des surfaces des colloides du sol	II, VII
11. Fixation biologique de l'azote	III
12. Dynamique de la matière organique dans les tropiques	III, II
13. Processus microbiens dans la rhizosphère	III, IV
14. Substances agro-chimiques et organismes du sol	III, II, IV
15. Utilisation des immondices urbaines et déchets industriels urbains et des résidus des cultures	III, IV, VI

16.	Techniques d'analyses des sols et des plantes	IV, II
17.	Economie de l'azote pour la production agricole dans les tropiques	IV
18.	Besoins en éléments nutritifs avec approvisionnement en eau limité et adéquat	IV, I
19.	Changement en éléments nutritifs sous divers systèmes de rotation et de pratiques culturales	IV
20.	Besoins en engrais des oléagineux, des légumineuses à grains et des cultures de plantations	IV
21.	Utilisation d'engrais et qualités des récoltes	IV
22.	Genèse et classification des principaux sols des tropiques et subtropiques	V
23.	Formations secondaires dans les sols	V, II, B
24.	Cartes des sols – densité et échelle de la cartographie et interprétation des cartes	V
25.	Techniques micromorphologiques	B
26.	Utilisation des données de la cartographie des sols pour le développement intégré des bassins versant – études de cas particuliers	V, VI
27.	Aménagement des sols à problèmes pour l'augmentation de la productivité: a) sols sableux b) sols calcaires c) sols gypseux d) sols ferrallitiques acides e) sols organiques	VI
28.	Aménagement des bassins versants pour le contrôle de l'envasement et des inondations	VI, I
29.	Qualité de l'eau et productivité du sol	VI, I, II
30.	Technologie de l'utilisation de l'eau sous culture non irriguée	VI, I
31.	Caractérisation et quantification des minéraux du sol	VII
32.	Minéralogie du sol et comportement nutritif	VII, II, IV
33.	Constituents amorphes et non silicatés du sol	VII, V
34.	Genèse et transformation des minéraux du sol	VII, B

Note: des réunions spéciales de certaines commissions seront réservées à des communications d'intérêt général.

Remise et présentation des communications

Conformément à la politique de l'AISS, le nombre des communications acceptées pour les séances plénières, les réunions des commissions et les séances de présentation poster sera limité à 400.

Les auteurs sont incessamment priés de faire connaître, avant le 1er janvier 1981, leur intention de participer au Congrès et de présenter une communication.

Comptes rendus

On propose de publier en entier les communications présentées aux séances plénières et aux symposiums; les exposés aux séances des Commissions et aux séances posters seront publiés sous forme de résumé. Si les textes de toutes les communications acceptées pour présentation aux séances des commissions sont remis en temps utile et si une demande est introduite pour la publication du texte en entier, le Comité Organisateur étudiera cette possibilité en temps opportun.

Les auteurs sont tenus à remettre le résumé de leur communication dans les 3 langues de l'AISS (Anglais, Français, Allemand).

Séances posters

Un nombre limité de participants aura l'occasion de faire des présentations aux séances posters. Les auteurs désireux d'utiliser cette possibilité sont tenus à l'indiquer lors de la remise du texte de leur communication. Ils seront responsables de la préparation des posters conformément aux directives générales qui seront élaborées par les organisateurs du Congrès.

Directives générales

1. Seuls les membres de l'AISS sont autorisés à présenter des communications.
2. Chaque chercheur ne pourra présenter qu'une seule présentation comme auteur principal et en outre pas plus d'une comme co-auteur.
3. Le texte de chaque communication devra être accompagné d'un résumé dans les trois langues officielles de l'AISS (Anglais, Français, Allemand).
4. Un des auteurs devra présenter la communication au Congrès.
5. Un maximum de 25 minutes sera accordé pour chaque exposé, soit 15 minutes pour la présentation et 10 minutes pour la discussion.
6. Le Comité Organisateur se réserve le droit de faire la sélection et la publication des communications et des résumés.

Des instructions détaillées pour la préparation et la remise des manuscrits et les séances posters, etc... seront fournies dans la seconde circulaire qui sera publiée dans le Bulletin de l'AISS.

Groupes Spécialisés et Groupes de Travail

Le Comité Organisateur du 12ème Congrès de l'AISS désire vivement aider les groupes spécialisés et les groupes de travail qui aimeraient se réunir durant le Congrès. Il existe des Sous-commissions de Sols salins et de Micromorphologie des sols et onze Groupes de Travail de l'Association. En outre, certaines Commissions pourraient désirer d'organiser des séances de travail en dehors des séances prévues au programme pour la présentation des communications. Les présidents des groupes qui, dans ce but, aimeraient réserver du temps et des locaux, sont priés d'adresser une demande écrite au secrétaire du Comité organisateur en mentionnant le nombre approximatif de participants. Chaque groupe sera responsable de son ordre du jour.

Excursions du Congrès

L'Inde est un sous-continent présentant de grandes variations de climat, de sols et de cultures. On y rencontre en effet des régions tropicales, subtropicales, tempérées, arides, semi-arides, humides et subhumides. L'Inde est également un pays riche en trésors touristiques: des temples, des palais, des forteresses et de magnifiques paysages. Les six excursions après le Congrès ont été planifiés dans le but d'offrir aux participants non seulement un aperçu du paysage, des sols et des cultures et des recherches pour l'aménagement du sol, des cultures et de l'eau, mais également des endroits d'intérêt touristique.

Toutes les excursions commenceront le 17 février 1982 et se termineront dans une ville reliée par des lignes aériennes internationales. Le coût est calculé pour une personne seule et comprend le transport aérien et routier, les repas et le logement et le livret-guide. Les coûts mentionnés sont approximatifs et peuvent varier de 20 à 30 pourcent.

Excursion après-congrès no. 1

Durée: 8 jours (17–24 février 1982)

Coût prévu: U.S. $ 375.–

Itinéraire: Delhi, Hissar, Karnal, Chandigarh, Simla, Nangal, Ludhiana, Amritsar, Delhi (entièrement par route).

Points saillants: étude du paysage, sols (Fluvisols, Cambisols, Solonetz, Solonchaks, Sierozems, Luvisols), systèmes de cultures, irrigation par puits et canaux dans les plaines alluviales Indo-gangétiques de Haryana et Punjab et régions submontagneuses et montagneuses; visite des Universités agronomiques à Hissar et Ludhiana, Instituts de recherches à Karnal, Chandigarh, Simla et Amritsar; visite d'usine d'engrais, barrage de Bhakra; visite des jardins de Pinjore de l'époque Mughal et Temple d'Or à Amritsar. Les participants retourneront à Delhi.

Visite de Kashmir: des arrangements spéciaux peuvent être faits pour eux qui désirent visiter Kashmir (par avion) après la fin de l'excursion à partir de Amritsar ou de Delhi. Le coût sera additionnel.

12. INTERNATIONALER BODENKUNDLICHER KONGRESS

Neu Delhi, Indien, 8.–16. Februar 1982

ERSTE ANKÜNDIGUNG

Die Indische Bodenkundliche Gesellschaft freut sich bekanntzugeben, dass der 12. Internationale Bodenkundliche Kongress vom 8.–16. Februar 1982 in Neu Delhi (Indien) abgehalten werden soll. Dieser 12. IBG-Kongress, der unter der Schirmherrschaft der Indischen Bodenkundlichen Gesellschaft gemeinschaftlich mit der Indischen Regierung stehen wird, wird durch den Indischen Rat für Landwirdtschaftliche Forschung, eine Spitzenorganisation der Indischen Landwirtschaftliche Forschung, unter Einschluss der tierischen Wissenschaften, finanziell unterstützt werden.

Thema des Kongresses ist: 'Die Nutzung der Bodenressourcen als Antwort auf die Herausforderung an die Menschheit.'

Plenarsitzungen

Durch einige Vorträge international anerkannter Fachleute soll die Aufmerksamkeit auf die Optimierung der Landnutzung und deš Ertrages in den (i) ariden, (ii) semiariden und (iii) humiden Tropen gerichtet werden. Dabei werden sowohl die heutige Situation als auch die zukünftigen Möglichkeiten zur Sprache kommen. Ausserdem ist ein öffentliche Diskussion über 'die Zukunft der Bodenkunde' geplant, in der führende Wissenschaftler aus jeder der sieben Kommissionen eingeladen werden sollen, um zu diskutieren, wie die einzelnen Specialgebiete künftig zum besseren Verständnis der Böden und zu ihrer besseren Nutzung zum Wohle der Menschheit beitragen können.

Symposien

Zu folgenden Themen werden Symposien veranstaltet werden:

1. Vertisole
2. überflutete Reis-Böden
3. Organische Düngung in den Tropen und Subtropen: Möglichkeiten und Grenzen
4. Nicht-symbiotische Stickstoff-Fixierung.

Symposiums-Vorträge werden auf Einladung gehalten und sind pro Thema auf 5–7 Sprecher begrenzt.

Kommissionssitzungen

Für die anzumeldenden Vorträge in den einzelnen Kommissionssitzungen werden folgende Themen vorgeschlagen:

Thema	*(Sub) Kommissionen*
1. Bewegung von Wasser und gelösten Stoffen in Böden	I, II
2. Bodentemperatur als edaphischer Faktor	I
3. Wasserbilanz des Bodens	I
4. Physikalisches Bodenmilieu und Wachstum von Wurzeln und anderen unterirdischen Pflanzenteilen	I
5. Chemie und Pflanzenverfügbarkeit von Spurenelementen in Böden	II, IV
6. Toxische Elemente in Lebensraum Boden	II, IV
7. Eigenschaften der Bodenlösung	II, I, A
8. Organische Metallkomplexe	II
9. Chemie saurer Böden	II
10. Wesen und Eigenschaften der bodenkolloidalen Oberfläche	II, VII
11. Biologische Stickstoff-Fixierung	III
12. Dynamiek der organischen Substanz in den Tropen	III, II
13. Mikrobielle Vorgänge in der Rhizosphäre	III, IV
14. Agrochemikalien und Bodenorganismen	III, II, IV
15. Verwertung von städtischen und industriellen Abfällen und von Ernterückständen	III, IV, VI

16.	Methoden der Bodenuntersuchung und Pflanzenanalyse	IV, II
17.	Stickstoffökonomie der tropischen Pflanzenproduktion	IV
18.	Nährstoffbedarf bei eingeschränkter und ausreichender Wasserversorgung	IV, I
19.	Nährstoffveränderungen unter verschiedenen Bewirtschaftungsmethoden und Bodenbearbeitungspraktiken	IV
20.	Düngemittelbedarf von Ölsamen, Körnerhülsenfrüchten und Plantagengewachsen	IV
21.	Düngemittelverwendung und Qualität der Produkte	IV
22.	Genetik und Systematik der wichtigsten Böden der Tropen und Subtropen	V
23.	Sekundäre Bildungen in Böden	V, II, B
24.	Bodenkarten: Intensität der Aufnahme, Masstab der Kartierung und Interpretation	V
25.	Mikromorphologische Techniken	B
26.	Verwendung von Geländeaufnahmedaten für integrierte Stromgebietentwicklung Fallstudien	V, VI
27.	Bearbeitung problematischer Böden zur erhöhten Produktion: a) Sandböden, b) Kalkböden, c) gipshaltige Böden, d) saure ferralitische Böden, e) organische Böden	VI
28.	Stromgebiettechnik zur Bekämpfung von Sedimenten und Überflusung	VI, I
29.	Wasserqualität und Bodenproduktivität	VI, I, II
30.	Technologie der Wassernutzung in der regenabhängigen Landwirtschaft	VI, I
31.	Charakterisierung und Quantisierung der Bodenminerale	VII
32.	Mineralogie der Böden und Nährstoffverhalten	VII, II, IV
33.	Amorphe und Nichtsilikat-Bestandteile von Böden	VII, V
34.	Entstehung und Veränderung der Bodenminerale	VII, V, B

Anmerkung: einige Kommissionssitzungen werden auch für geeignete, eingesandte Vorträge über Themen von allgemeinen Interesse zur Verfügung stehen.

Anmeldung und Durchführung der Vorträge

Gemäss der IBG-Praxis wird die Zahl der angenommenen Beiträge in den Plenarsitzungen, Kommissionssitzungen und 'poster sessions' auf insgesamt 400 begrenzt sein. Die Autoren werden gebeten, ihre Absicht teilzunehmen und Vorträge zu halten vor dem. 1. Januar 1981 anzuzeigen.

Berichte

Es ist geplant, dass die Vorträge, die in den Plenarsitzungen und Symposien gehalten werden, in voller Länge veröffentlicht werden, während die Beiträge, die zum Vortrag in den Kommissionssitzungen und für die poster sessions angenommen worden sind, nur als Kurzfassungen erscheinen sollen. Soferne alle angenommenen Beiträge für die Kommissionssitzungen rechtzeitig erhalten werden, und Bedarf für eine vollständige Veröffentlichung dieser Artikel besteht, wird das Organisationskomitee die Sachlage zur gegebenen Zeit prüfen.

Die Autoren werden für die Bereitstellung der Kurzfassungen ihrer Beiträge in den drei offiziellen Sprachen der Gesellschaft (Englisch, Französisch und Deutsch) verantwortlich sein.

'Poster sessions'

Für eine begrenzte Zahl von Teilnehmern wird die Gelegenheit vorhanden sein, in 'poster sessions' auszustellen. Autoren, die in den poster sessions ausstellen wollen, mögen dies bereits bei der Anmeldung angeben.

Die Verantwortung für die Anfertigung der poster, gemäss den von den Kongressveranstaltern herauszugebenden Richtlinien, liegt bei den Autoren.

Allgemeine Richtlinien

1. Nur Mitglieder der IBG kommen für die Vorträge in Frage.
2. Jeder Wissenschaftler darf nur einen Beitrag als erster Autor und höchstens einen Beitrag als Koautor (an anderer als an erster Stelle) anmelden.

3. Jeder Beitrag soll mit einer Kurzfassung in den drei offiziellen Sprachen der IBG (Englisch, Französisch und Deutsch) versehen sein.
4. Der Vortrag muss durch einen der Autoren gehalten werden.
5. Für jeden Vortrag werden insgesamt 25 Minuten zur Verfügung stehen, und zwar 15 Minuten für den Vortrag und 10 Minuten für Diskussion.
6. Das Organisationskomitee behält sich das Recht vor, alle eingesandten Beiträge und Kurzfassungen auszuwählen und zu genaue Anleitungen zur Herstellung und Einsendung der Manuskripte sowie über die poster sessions etc. werden im zweiten Rundschreiben zu finden sein, welches in den Mitteilungen der IBG erscheinen wird.

Spezielle Interessen und Arbeitsgruppen

Das Organisationskomitee des 12. IBG-Kongresses ist bemüht, Leuten mit speziellen, gemeinsamen Interessen sowie Arbeitsgruppen, die sich während des Kongresses treffen wollen, entsprechende Räumlichkeiten zur Verfügung zu stellen. So gibt es in der Gesellschaft Subkommissionen über Salzböden und Bodenmikromorphologie sowie elf Arbeitsgruppen. Ausserdem werden einige Kommissionen sich vielleicht ausserhalb der im Programm vorgesehenen Vortragszeiten treffen oder spezielle Zusammenkünfte haben wollen. Die Vorsitzenden solcher Gruppen, die Zeit und Räumlichkeiten für solche Zwecke reserviert haben wollen, werden gebeten, an das Organisationssekretariat zu schreiben, wobei die ungefähre Zahl der betroffenen Teilnehmer und spezielle Wünsche angegeben werden sollten. Wir erwarten, dass jede derartige Gruppe ihren eigenen Zeitplan entwirft.

Exkursionen

Indien ist ein Subkontinent mit einem weiten Spektrum von Klimaten, von Böden und Nutzpflanzen. Tatsächlich kann man hier sowohl tropische, subtropische, gemässigte, aride, semi-aride, humide als auch subhumide Regionen antreffen. Ausserdem ist Indien ein Land voller touristischer Sehenwürdigkeiten – Tempel, Paläste, Forts und grossartige Landschaften. Die sechs Nachkongress-Exkursionen sind so geplant worden, dass sie den Teilnehmern einen Querschnitt der Landschaft, der Böden und Nutzpflanzen sowie der indischen Forschung über Boden-, Wasser- und Nutzpflanzenwirtschaft bieten, aber auch Stätten von touristischer Bedeutung.

Sämtliche Exkursionen beginnen am 17. Februar 1982 und enden in einer Stadt mit internationalen Flugverbindungen. Die Kosten sind für Einzelpersonen berechnet und schliessen den Transport durch Flugzeug/Bus, Verpflegung, Übernachtung sowie Bücher (Exkursionsführer) ein. Die Kosten sind nur beiläufig und können sich ohne weiteres um 20–30 Prozent ändern.

Nachkongress-Exkursion Nr. 1

Dauer: Acht Tage (17.–24. Februar 1982)

Vorraussichtliche Kosten: U.S. $ 375.–

Route: Delhi/Hissar/Karnal/ Tschnadigar/Simla/Nangal/Ludhiana/Amritsar/Delhi (durchwegs Bus)

Höhepunkte: Besichtigung der Landschaften, Böden (Fluvisols, Cambisols, Solonetz, Solonchaks, Sierozems, Luvisols), Bewirtschaftungsformen, Bewässerung in den alluvialen Indus-Gangesebenen von Haryana und Punjab sowie in submontanen und montanen Gebieten; ein Besuch der Landwirtschaftlichen Hochschulen von Hissar und Ludhiana, von Forschungsinstituten in Karnal, Tschandigar, Simla und Amritsar; Besuch der Düngerfabrik Bhakra Dam; Besuch der Pinjore Gärten aus der Mughalzeit und des goldenen Tempels zu Amritsar.

Besuch von Kaschmir: Für Teilnehmer, die im Anschluss an die Exkursion von Amritsar oder Delhi aus, noch Kaschmir besuchen wollen (Luftweg), kann dies arrangiert werden. Die Kosten werden extra berechnet.

Nachkongress-Exkursion Nr. 2
Dauer: Sieben Tage (17.–23. Februar 1982)
Voraussichtliche Kosten: U.S. $ 300.–
Route: Delhi/Roorkee/Dehra Dun/Mussoorie/Plant Nagar/Nainital/Delhi (durchwegs Bus)
Höhepunkte: Besichtigung der Landschaften, Böden (Luvisols, Fluvisols, Cambisols, Solonchaks, Mollisols), Landwirtschaftsformen und verschiedene Arten der Bodennutzung in den Indus-Gangesebenen, submontanen und montanen Regionen einschliesslich dem Taria-Gebiet; Besuch der Landwirtschaflichen Hochschule in Pant Nagar, von Forschungsinstituten für Bewässerung, Bodenerhaltung, Forstwirtschaft und für Luftbilder-Auswertung; Besichtigung der Höhenkurorte Mussoorie und Nainital, der berühmten Pilgerstätte Haridwar und der Schwefelquellen bei Dehra Dun.

Nachkongress-Exkursion Nr. 3
Dauer: Acht Tage (17.–24. Februar 1982)
Vorraussichtliche Kosten: U.S. $ 475.–
Route: Delhi/Jaipur/Jodhpur/Udaipur/Aurangabad/Bombay (durchwegs Flugzeug)
Höhepunkte: Besichtigung der Landschaften, Böden (Sierozems, Psamments (Arenosols), Vertisols, Aridisols (Yermosols)); landwirtschaftliche und andere Landnutzungen in Halbwüsten- und Wüstengebieten und am semiariden Deccan-Plateau; Besuch der Landwirtschaftlichen Hochschule und des Zentralinstitutes für die Untersuchung arider Zonen in Jodhpur; Sehenswürdigkeiten in Jaipur und Jodhpur, die Höhlen von Ajanta und Ellora bei Aurangabad und die weltstädtische City von Bombay.

Nachkongress-Exkursion Nr. 4
Dauer: Sieben Tage (17.–23. Februar 1982)
Vorraussichtliche Kosten: U.S. $ 450.–
Route: Delhi/Khajuraho/Varanasi/Ranchi/Kalkutta (durchwegs Flugzeug)
Höhepunkte: Besichtigung der Landschaften, Böden (Luvisols, Cambisols, rhodic Alfisols, Lateritic soils, Solonchaks, Gleysols); Formen der Landwirtschaft und Landnutzung in den schwachhügeligen Bundelkhand Ebenen, alluviale Indus-Gangesebene und Chhota Nagpur Plateau; Besuch der Landwirtschaftlichen Hochschulen in Varanasi und Ranchi; zu den Sehenswürdigkeiten werden die berühmten Skulpturen im Tempel von Khajuraho, sowie die am Ganges gelegenen Tempel bei Varanasi. Ausserdem sind Besichtigungen innerhalb von Kalkutta vorgesehen.

Nachkongress-Exkursion Nr. 5
Dauer: Sieben Tage (17.–23. Februar 1982)
Vorraussichtliche Kosten: U.S. $ 540.–
Route: Delhi/Nagpur/Haiderabad/Bhubaneswar/Kalkutta (durchwegs Flugzeug)
Höhepunkte: Besichtigung der Landschaften, Böden (Vertisols, Luvisols, Lateritic soils, Fluvisols, Solonchaks, Gleysols); Formen der Landnutzung auf dem Deccan-Plateau, östliches Hügelland, Besuch der Landwirtschaftlichen Hochschulen in Haiderabad und Bhubaneswar und von Forschungsstationen, darunter das Internationale Institut für Nutzpflanzenforschung in den Semiariden Tropen (ICRISAT, Haiderabad); Sehenswürdigkeiten in Haiderabad, Tempel in Konarak und Puri, östliche Meeresküste und weltstädtische City von Kalkutta.

Nachkongress-Exkursion Nr. 6
Dauer: Neun Tage (17.–25. Februar 1982)
Vorraussichtliche Kosten: U.S. $ 725.–
Route: Delhi/Haiderabad/Bangalur/Maisur/Koimbatur/Ootacamund/Trivandrum/Kap Comorin/Madras (Flugzeug/Bus)
Höhepunkte: Besichtigung der Landschaften, Böden (Vertisols, Lateritic soils, rhodic Alfisols, Acid Sulphate soils (thionic Fluvisols), Formen der Landwirtschaft und Landnutzung auf dem Deccan-Plateau, westliche Hügellandschaften mit Tee- und Reiskulturen in den erweiterten Flussmündungen; Besuch der Landwirtschaftlichen Hochschulen in Haiderabad und Koimbatur, Forschungsinstitute für Zuckerrohr, Hirse, für Früchte der gemässigten Zonen und für Bodenerhaltung, darunter das Internationale Institut für Nutzpflanzenforschung in den Semiariden Tropen (ICRISAT, Haiderabad); Sehenswürdigkeiten in Haiderabad und Bangalur, Paläste und die Brindava Gärten in Maisur; der berühmte Kovalamstrand an der Westküste, Kap Comorin (Südspitze Indiens) und die Stadt Madras.

Ausflüge innerhalb Delhis
Reguläre Halb- und Ganztagsausflüge mit Taxi, Touristenbus etc. werden in Delhi angeboten. Solche Fahrten können einen Tag vorher vereinbart werden. Ein Halbtagsausflug kostet etwa U.S. $ 5.–, ein Ganztagsausflug etwa U.S. $ 10.–

Ausflug nach Agra

Ein Eintagsausflug nach Agra kann an einem Pausentag während der Kongressitzungen veranstaltet werden. Die Teilnehmer besuchen den Taj Mahal, das Rote Fort und andere historische Stätten in und um Agra, welches etwa 200 km von Delhi entfernt ist. Die Kosten werden etwa U.S. $ 50.– betragen.

Beachten Sie bitte:

1. Bei jeder Exkursion kann nur eine begrenzte Zahl von Teilnehmern untergebracht werden.
2. Bei zu grosser Interessentenzahl für eine bestimmte Exkursion werden diejenigen Anmeldungen bevorzugt, die schon bei der Voranmeldung eine Rangordnung der bevorzugten Exkursionen angeben.
3. Sollte die Zahl der Anmeldungen zu einer Exkursion zu gering bleiben, so muss sie gestrichen werden.

Anmeldegebühren (diese Gebühren werden nicht rückerstattet)

Anmeldegebühr pro Teilnehmer	U.S. $ 125.–
(die Teilnehmer erhalten die vollständigen Berichte ohne berechnung)	
Anmeldegebühr für begleitende Ehefrau	U.S. $ 50.–

Unterkunft

Die Teilnehmer werden in Hotels untergebracht. Die Preise sind sehr unterschiedlich. In einem einigermassen guten Hotel bezahlt man etwa U.S. $ 30.– –40.– pro Tag. Dies ist natürlich nur eine sehr ungenaue Angabe. In der zweiten Ankündigung werden den Interessenten die verschiedenen Arten der Unterbringung, die Ausstattung der verschiedenen Hotelkategorien und die Preise im einzelnen mitgeteilt werden. Die Teilnehmer können ihre Wahl dann bei der Übersendung der Teilnehmergebühr treffen.

Wichtige Schlusstermine

Veranmeldung:	1. August 1980
Endgültige Anmeldung:	1. Juli 1981
Einsendeschluss Kurzfassung gemeinsam mit Manuskript:	1. Januar 1981
Letzter Empfangstermin der Teilnahmegebühr für Autoren mit angenommenen Beiträgen:	20. April 1981

KORRESPONDENZEN RICHTEN SIE BITTE AN:

Dr. T. D. Biswas., Organizing Secretary,
12th International Society of Soil Science Congress,
Division of Soil Science & Agricultural Chemistry,
Indian Agricultural Research Institute,
New Delhi: 110 012, Indien.

12TH INTERNATIONAL CONGRESS OF SOIL SCIENCE

FIRST NOTICE OF INTENT

The Congress wil be held in New Delhi, India during February 8–16, 1982. The intending participants are requested to complete this form and mail it to reach the following address not later than August 1, 1980.

Dr. T. D. Biswas, Organising Secretary
12th International Society of Soil Science Congress
Indian Agricultural Research Institute
New Delhi: 110 012 India

Please type or print in Block Letters.

Name : Dr./Mr./Mrs./Miss _____

Address: _____

_____

_____

☐ I intend to attend the 12th ISSS Congress

☐ I expect to be accompanied by:
Wife _____ Name
Others _____

☐ I shall pay the Congress Registration fee (U.S. $ 125.00/175.00) in 1981/1982.

☐ My preference for Post-Congress Tour is
Post Congress Tour No. **1st 2nd 3rd 4th 5th 6th**

☐ I intend to join the Tour to Agra

☐ I intend to submit a paper pertaining to the theme in Commission/Commissions

The proposed title of the paper(s) is (are) _____

_____

_____

If my paper is accepted for presentation, I would prefer
☐ i. To make a regular 15-minute oral presentation
☐ ii. To present my material at a Poster Session over 2–3 hour period

☐ I would like to have accommodation in a hotel to be arranged by the Congress
☐ I shall make my own arrangement for accommodation during the Congress

Place and Date: _____

Signature

UNESCO & FAO announce the completion of the
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melden die Fertigstellung der

SOIL MAP OF THE WORLD
CARTE MONDIALE DES SOLS
WELTBODENKARTE

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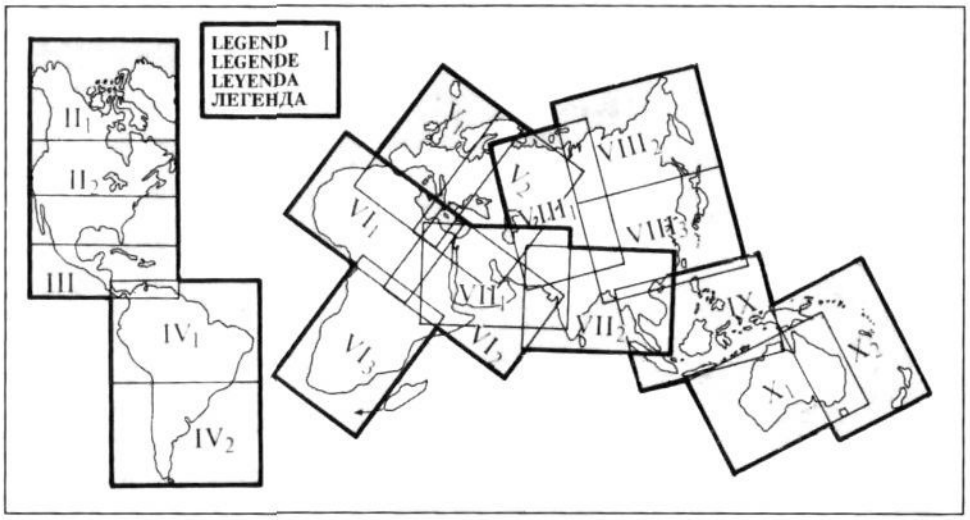

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III	Mexico-Central America (E, S)	35	50
IV 1–2	South America (E, S)	48	50
V 1–2	Europe	n.y.a.	50
VI 1–2–3	Africa (E, F)	75	50
VII 1–2	South Asia (E)	46	50
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Also available at the International Soil Museum, Wageningen, The Netherlands

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

British Society of Soil Science

At the Annual General Meeting of the British Society in September, 1978 the Council announced the award of the Society's Silver Jubilee Medal for 1977 to Dr. R. L. Parfitt for his major contribution to a series of four papers entitled Adsorption on Hydrous Oxides, published in volume 28 of the Journal of Soil Science.

On 10th and 11th April 1979, the British Society held a joint meeting with the Royal Geographical Society, at the rooms of the latter, on 'The characteristics of soils of the humid tropics and their potential for intensified crop production'.

The respective sessions dealt with 'General Introduction', 'Soil and land use criteria', 'Soils of S.E. Asia and Latin America' and 'Soils of Africa'. A total of 14 talks were delivered, by both British and invited foreign soil scientists.

The meeting was accompanied by a display on 'Soil and Land Potential' staged by the Land Resources Development Centre of the British Ministry of Overseas Development. This exhibition comprised photographs, posters, maps and equipment. One section dealt with the part that soil studies play in an integrated investigation of development areas, and another reported on some special soil and geomorphological studies.

The next Annual field meeting of the Society will take place at the University of Nottingham School of Agriculture from 10th to 13th September 1979. Workshop sessions will deal with: 'Specification of soil structure for plant growth', 'Pollutants and industry', 'Soil moisture', 'The transport of agrochemicals through soils' and 'Land restoration'.

Information: Dr. D. V. Crawford, University of Nottingham, School of Agriculture, Sutton Bonington, Loughborough, LE 12 5RD, England.

Association Marocaine des Sciences du Sol

L'Association Marocaine des Sciences du Sol (AMSSOL) a tenu sa troisième assemblée générale annuelle les 23 et 24 Février 1979. Trois exposés techniques ont précédé la lecture des rapports moral et financier.

Le bureau élu s'est composé comme suit:

– Président:	M. Zaki Abderrahmane
– Vice Président:	Dr. Yacoubi Mohamed Abdouh
– Secrétaire Général:	M. Benmiloui Mohamed
– Secrétaire Général Adjoint	M. Osghiri Ahmed
– Trésorier:	M. Stitou Mohamed
– Responsable de la revue:	Dr. Ghanem Haddou
– Responsable des affaires culturelles:	M. Alaoui Abdelaziz

L'association a publié le premier numéro de sa revue scientifique 'ATTORBA', et prépare la publication prochaine du deuxième numéro.

La nouvelle *adresse* de l'association est:
AMSSOL, B.P.: 4102 – Rabat – Tour Hassan – Maroc.

Soil Science Society of America

The joint annual meetings of the American Society of Agronomy, Crop Science Society of America and the Soil Science Society of America were held in Chicago, Illinois, from 3 to 8 December 1978. About 3500 members and guests attended; they had the opportunity to select from more than 1200 papers presented in paper sessions poster sessions and symposia.

Several awards were presented at the annual SSSA luncheon on 5 December. Dr. Champ B. Tanner, professor at the Univ. of Wisconsin-Madison, received the Soil Science Award. Dr. Alfred M. Blackner, an adjunct assistant professor at Iowa State Univ., received the 1978 Emil Truog Award in Soil Science. The luncheon, held during the 42nd annual meeting of SSSA, was also the occasion for the introduction of 13 new SSSA Fellows.

In addition to the Fellows introduction, Honorary Membership was bestowed upon William P. Martin, Sigurd W. Melsted, Guy D. Smith, and Roy W. Simonson.

At the conclusion of the luncheon, Dr. Parker F. Pratt, Univ. of California-Riverside, passed the presidential gavel to Dr. Leo Walsh, Univ. of Wisconsin-Madison. Dr. William E. Larson, USDA-SEA-FR, Univ. of Minnesota, St. Paul, was introduced as the new President-Elect of SSSA.

The 1979 annual meetings will be held from 5th to 10th August in Fort Collins, Colorado.

Information: Dr. Matthias Stelly, Executive Vice-President, Soil Science Society of America, 677 South Segoe Road, Madison, Wisconsin 53711, USA.

Soil Science Society of China

The publication of the SSSC periodical 'Acta Pedologica Sinica' has been resumed since 1978, after twelve years of interruption. It is now a quarterly journal, with English summaries. The English part will be expanded from Vol. 16, no. 3 of September 1979 onwards.

The Nanking Institute of Soil Science of the Academia Sinica has also published a book, *The Soils of China* (1978). It is 730 pages thick and is accompanied by a soil map of China at scale 1:10.000.000, of which the legend has been translated into English.

Thirty-three Chinese soil scientists have recently become members of the International Society.

The ISSS is very glad that China has now effectively re-joined the international community of soil science. It wishes the national Society all the best for the success of its activities and hopes that many more Chinese soil scientists will become members of ISSS in the forthcoming years.

The *address* of the Society is: Prof. Dr. Ching-Kwei Li, President, Soil Science Society of China, c/o Nanking Institute of Soil Science, Academia Sinica, P.O. Box 821, Nanking, Peoples Republic of China.

Sociedad Colombiana de la Ciencia del Suelo

The VIth Soils Colloquium of the SCCS will take place in Palmira from 19th to 21th September 1979. The subject of the Colloquium will be 'Suelos salinos y elementos secundários en la Agricultura Colombiana'.

Information: Dr. Alberto Cordero Arb, Secretário Executivo, Apartado Aereo 142, Palmira, Valle, Colombia.

Sociedad Chilena de la Ciencia del Suelo

The Board of the Chilean Society is now composed as follows:
President: Dr. Jorge Etchevere, Concepción
Secretary-Treasurer: Prof. Walter Luzio, Santiago
Directory: Prof. Sergio Alcayaga, Dr. Eduardo Besoaín, Dr. Ricardo Monorato, Dr. Bernardo Silva.

At present, 94 persons are members of the Society, with an internal organisation through Commissions, as in the ISSS.

The 2° *Simposio Nacional de la Ciencia del Suelo* was held at the Facultad de Agronomia, Universidad de Chile, Santiago, from 17 till 20 October 1978. Fifty papers were presented, related to different topics of Soil Science as Soil Fertility, Pedology, Soil Chemistry, Soil Biology, Soil-Water relationships, Soil Physics and Soil Research in Chili.

The 3rd National Symposium will be organised by the Universidad Catholica de Chile in 1981.

Information: Prof. Walter Luzio, Secretario Ejecutivo, Sociedad Chilena de la Ciencia del Suelo, Casilla 1004, Santiago, Chile.

Israel Society of Soil Science

The following persons were elected as new members of the executive council of the Israel Society of Soil Science:

Prof. J. Hagin (Chairman)
Dr. S. Dasberg (Secretary)
Dr. Y. Chen (Treasurer)
Dr. R. Keren (Member)
Dr. S. Manor (Member)

Address: Dr. S. Dasberg, Secretary, Israel Society of Soil Science, c/o Institute of Soils and Water, ARO, The Volcany Center, P.O. Box 6, Bet Dagan 50–200, Israel.

Österreichische Bodenkundliche Gesellschaft

Die Vortragsveranstaltungen in Herbst 1978 fanden statt am 22 November 1978 auf der Universität für Bodenkultur, Wien.

Die Vortragsveranstaltung war im Zusammenhang mit der Thematik der Excursionen in den Jahren 1977 und 1978: 'Standorts und Meliorationsprobleme in den Talungen'.

Am 13 December 1978 gab es eine neue Sammlung mit Berichte über den 11 Intern. Bodenk. Kongress in Edmonton, Canada.

Information: Dr. Max Eisenhut, Schriftführer, Österreichische Bodenkundliche Gesellschaft, Gregor Mendelstrasze 33, A-1180 Wien, Österreich.

Societatea Nationala Romana Pentru Stiinta Solului

The 10th Conference of the Romanian National Society of Soil Science is scheduled to be held from 27 August to 1 September 1979, in Brasov, a town located on the south-eastern part of the Transylvanian Basin, about 180 km north of Bucharest.

Meetings of the five Commissions of this society (Soil Physics and Technology; Soil Chemistry and Mineralogy; Soil Biology; Soil Fertility; Soil Genesis and Cartography), as well as symposia on soil science related to potato cropping, grassland reclamation, soil pollution and forest soil, are provided within the framework of the conference.

Study tours in south-eastern Transylvania, including both inspection of representative soil profiles and visits to research stations, agricultural farms and forest areas are also provided.

Information: Acad. Gr. Obrejanu, President, Societatea Nationala Romana Pentru Stiinta Solului, 71331 Bucureşti, Bd. Maraşti nr. 61 – Romania

IN MEMORIAM

Professor Dr. V. Ponomareva (1908–1978)

On October 28, 1978, Soviet soil science suffered a heavy loss by the passing away of Professor Dr. V. Ponomareva, Head of the soil biochemistry laboratory in the Central Museum of Soil Science in Leningrad.

She was born in a small village in the Penza region in 1908 and received her academic education at the Leningrad Agricultural Institute.

From the beginning of her scientific activity in the Dokuchaev Soil Institute Prof. Dr. Ponomareva worked in close connection with such outstanding Soviet scientists as N. Sokolov, I. Tiurin and A. Rode. From 1934 to 1941, together with academician Tiurin, she elaborated methods for the study of soil organic matter and investigated the composition and properties of humus in forest soils. Her most profound study was the research work on soil organic matter and its role in soil formation, carried out by her at the Dokuchaev Central Museum of Soil Science, where Prof. Ponomareva became a head of the soil biochemistry laboratory. It was characteristic for the scientific style of her research work that a close connection between the experiments and the soil investigations on humus composition and properties, carried out in various geographical zones of the USSR, made it possible to study deeply the most complicated natural phenomena. Ponomareva's well-known monograph 'The Theory of the Podsol forming Process' (1964) has been written with a deep insight and detailed study of the given problem in the best traditions of Dokuchaev's soil science. In this monograph a new biochemical concept of the podsol forming process has been suggested and its peculiarities in different physico-geographical conditions have been shown.

Professor Ponomareva received the Dokuchaev and the Williams prizes for her important experimental works.

She devoted a great deal of attention to the study of functional properties of humus acids as material and energetic agents of soil formation: properties of acids, reactions with bases and sesquioxides, migration and sedimentation properties, possibilities for decomposing silicate minerals, etc.

During the last years Prof. Ponomareva paid great attention to the study of the biological cycle of elements in the soil-plant system, taking into account the role of the biological factor in soil formation and the productivity of forest phytocenoses.

Professor Ponomareva maintained close connections with numerous soil scientists from all over the world. She attained recognition as a woman of research, friendliness and humanity.

Her colleagues and friends will long remember her wide vision, her infectious enthusiasm and her scientific creativity.

All-Union Society of Soil Scientists

Professor Dr. M. M. Kononova – Honorary Member of ISSS (1898–1979)

The Soviet soil science suffered another heavy loss.

On 20 February 1979 Professor Dr. M. M. Kononova, the oldest research worker of the Dokuchaev Soil Institute, USSR State prize winner, Honorary Member of the ISSS, Honoured Doctor of the German Agricultural Academy, editorial board member of the journals 'Pochvovedenie' and 'Geoderma', passed away at the age of 81 years.

Soil science lost one of the most outstanding scientists, a prominent authority in an important problem of soil science – the soil organic matter – which was studied by her for more than 50 years.

Maria Mikhailovna Kononova was born in 1898 and educated at Tashkent Universtiy, from which she graduated with honours in microbiology in 1925. She joined the Dokuchaev Soil Institute in 1932, where she worked in Academician Tiurin's laboratory till the very end of her life. Her dissertation on the theme 'Soil Organic Matter in Dry Steppes and its Transformation under the conditions of Irrigated Agriculture' in 1943 earned her the degree of Doctor of Agriculture. In 1946 M. M. Kononova was appointed Professor of Biochemistry and since that time she became Head of the laboratory of biochemistry. Together with her colleagues and co-workers Prof. Kononova contributed much to the development of a wide range of problems: 1) soil organic matter, its composition and the nature of its components; 2) transformation processes of the initial plant material and the biochemistry of the formation humus substances; 3) geographical regularities of humus formation in the main soil types; 4) the role of organic matter in soil formation, plant nutrition and improvement of soil fertility; 5) the change of organic matter under influence of soil cultivation. A valuable basic contribution was made by Prof. Kononova to solve all these problems, especially the biochemistry of the formation of humus substances and the processes of their change under influence of man's agricultural acitivity.

M. M. Kononova's attention was always focussed on new methods for investigation of soil organic matter. Her scientific work was recorded in 2 monographs and more than 150 papers, devoted to the main aspects of soil humus. Among them are 'Soil Humus and Recent Problems of its Studying' (1951), 'Soil Organic Matter, its Nature, Properties and Investigation Methods' (1963) and the fundamental work 'Humus of Natural and Cultivated Soils' (1975), which is the most complete review of this subject in modern scientific literature. All these books have been published in many countries and are well known among soil scientists.

Prof. Dr. M. M. Kononova was an active participant of International congresses, synposia and meetings, taking place in the Soviet Union and in other countries.

In recognition of her contribution to teaching and research, Prof. Kononova had several honours and awards conferred upon her. In 1967 she was elected as honorary Dr. Sc. by the Agricultural Academy of GDR and in 1974 she was elected as Honorary Member of the International Society of Soil Science.

Prof. Dr. M. M. Kononova was a personality of great soul. She was not only a teacher and preceptress of her co-workers and colleagues, but also their responsive and kind friend.

All-Union Society of Soil Scientists

SOIL MAP OF THE WORLD KEPT UP-TO-DATE

Since its completion the FAO/Unesco/ISSS Soil Map of the World has been put to many uses. It is the base for a global appraisal of land use potential in major agro-ecological zones, it has been used to assess land degradation and desertification hazards in Africa and the Near East, it serves as a map reference base for the transfer of experience and it has served as a common denominator for international communication on soil resources.

However, new data are steadily becoming available and need to be recorded to keep the Soil Map up to date. For instance, recent mapping in the Amazon region revealed a much wider extent of Podzols than is shown on the South America sheets; part of the Ferralsols shown on the Africa sheets may have to be converted into Acrisols; new correlations will be needed following the recent publication of a new soil map of China.

FAO and ISM have agreed to keep the Map up to date by incorporating new material, corrections and amendments that are needed for the various sheets. An appeal is made to ISSS members to send fresh data and proposals for improvements to one or both of: **Director of the International Soil Museum** (P.O. Box 353, Wageningen, Holland); **Director of the Land and Water Development Division of FAO** (Via delle Terme di Caracalla, Rome, Italy).

It is the intention that an updated mastercopy of the various sheets of the Soil Map be kept both at the ISM and at FAO, and that blueprints of corrected areas be made available to potential users upon request.

It is of the utmost importance that inventory of the world's soil resources be continued, to serve as a reference and a tool for international cooperation in the field of soil research and its application.

Members are therefore urged for active cooperation.

LA CARTE MONDIALE DES SOLS TENUE À JOUR

Depuis sa parution la Carte Mondiale des Sols FAO/Unesco/AISS a été intensément utilisée. Elle sert de base à une évaluation globale du potentiel productif des grandes zones agro-écologiques; la carte a été utilisée pour une étude des risques de dégradation et de désertification des terres en Afrique et au moyen-Orient; elle sert de référence cartographique pour un transfert d'experience et elle a stimulée – en tant que dénominateur commun de différentes nomenclatures – la communication internationale relative aux ressources en terre.

Toutefois de nouvelles données sont continuellement recueillies et progressivement les feuilles publiées ne reflèterons plus les acquisitions récentes. Par exemple la cartographie de la région amazonienne révèle une extension de Podzols beaucoup plus grande que le montre les feuilles de l'Amérique du Sud; une partie des Ferralsols en Afrique seraient à convertir en Acrisols; la publication de la nouvelle carte des sols de la Chine exigera un complèment de corrélation.

Le FAO et l'ISM entreprendront conjointement la mise à jour de la carte en y incorporant de nouvelles données ou des corrections et amendements qui seront préparées. L'AISS fait un appel à ses membres afin qu'ils envoient les données dont ils disposent à l'une des adresses suivantes et si possible aux deux: **Directeur du Muséum International des Sols** (ISM, B.P. 353, Wageningen, Hollande); **Directeur, Division Mise en valeur des Terres et des Eaux, FAO** (Via delle Terme di Caracalla, Rome, Italie).

La FAO et l'ISM se proposent de maintenir à jour un transparent de chaque feuille et de fournier des copies des sections amendées à ceux qui en feront la demande.

Il est très important que cet inventaire des sols du monde soit poursuivi afin qu'il puisse continuer à servir de référence et de moyen d'une coopération internationale dans le domaine de la recherche pédologique et des applications.

Une participation active des membres de l'AISS sera hautement appréciée.

ERHALTUNG DER WELTBODENKARTE AUF NEUSTEM STAND

Die FAO/Unesco/IBG Bodenkarte der Welt hat seit ihrer Vollendung vielerlei Verwendung gefunden. Sie dient als Grundlage für eine weltweite Darstellung des Land Nutzungs Potentials in den wichtigen agro-ökologischen Bereichen, sie war nützlich für die Wertung von Bodendegradation und Desertifikationsschäden in Afrika und dem Nahen Osten, sie dient als kartographische Referenzbasis für die Weitergabe von Erfahrungen und bildete eine gemeinsame begriffliche Grundlage im internationalen Kommunikationsbereich über Bodenvorkommen.

Es werden jedoch laufend neue Ergebnisse verfügbar, die verarbeitet werden müssen, um die Weltbodenkarte auf neustem Stand zu erhalten. Kürzliche Kartierarbeiten in die Amazones Region zeigten beispielsweise eine viel weitere Verbreitung von Podsole, als bisher auf den Südamerikablättern ausgewiesen war; ein Teil der Ferralsole, welche in den Afrikablättern erscheinen, muss voraussichtlich umgewandelt werden in Acrisole; neue Korrelationen werden durch das kürzliche Erscheinen einer neuen Bodenkarte von China erforderlich.

FAO und das ISM sind übereingekommen, die Karte auf neustem Stand zu erhalten durch Einbau von Korrekturen, Verbesserungen und neuem Material, welche für die verschiedenen Blätter anfallen.

In einem Aufruf werden die IBG Mitglieder gebeten neue Unterlagen und Verbesserungsvorschläge einzureichen, entweder an den **Direktor des Internationalen-Bodenmuseums** (ISM, P.O. Box 353, Wageningen, Holland) oder den **Direktor, Land and Water Development Division, FAO** (Via delle Terme di Caracalla, Rome, Italy).

Es ist beabsichtigt, eine auf jeweils neusten Stand gebrachte Master-Pause der verschiedenen Blätter der Bodenkarte bei ISM und FAO vorrätig zu halten und Pausdrücke der korrigierten Bereiche auf Anfrage den möglichen Nutzern verfügbar zu machen.

Es ist von grösste Bedeutung, dass diese Inventur die Weltbodenvorkommen fortgesetzt wird, um als Referenz und Arbeitsmittel für internationale Kooperation in der Bodenforschung und Anwendung der Forschungsergebnisse zu dienen.

Die Mitglieder werden daher dringend um aktive Mitarbeit gebeten.

Proposal for a new ISSS Working Group/Proposition pour un nouveau Groupe de Travail de l'AISS/Vorschlag für eine neue IBG Arbeitsgruppe

STUDIES OF THE NATURE AND PROPERTIES OF SOIL COLLOID SURFACES

Report of a Meeting held in the Groupe de Physico-Chemie Minerale et de Catalyse, Boltzmann Building, Place Croix du Sud, Louvain-La-Neuve, Belgium on October 4th, 1978.

1. General introduction

Prior to the meeting information was circulated world-wide to 125 soil and clay scientists outlining a proposal put forward at the XIth I.S.S.S. Congress in Edmonton for concerted effort on studies of the nature and properties of soil colloid surfaces, and asking a number of questions regarding the composition of a 'steering committee', areas for research, the raising of funds, etc. A total of 52 replies were received, and the information contained in these was summarised in a document circulated to the persons who had replied. The majority of the replies favoured the election of a 'steering committee' at the Louvain-La-Neuve meeting. A substantial number expressed a preference for a small 'steering committee' for establishing policy, outlining areas for research, helping with the raising of funds, etc.

The 12 scientists present at Louvain-La-Neuve favoured the principle of a small 'steering committee' of six persons backed by a 'committee at large'. In selecting the larger committee of 16 persons they gave very careful consideration to scientists who would represent the different geographical regions. Thus selection was difficult because of the large number of excellent research personnel who had indicated their willingness to cooperate. Therefore the representatives involved with selection wish to emphasize that non-selection to the committee should not preclude the very active participation of interested scientists in deciding policy, and a number of suggestions will be made at a later date with regard to contributions which they can make.

2. The composition of the committees

2.1 *The Steering Committee*

The following nominations were made: J. P. Quirk (Australia, chairman), G. H. Bolt (The Netherlands, vice-chairman), M. H. B. Hayes (U.K., secretary), A. Herbillon (Belgium), M. M. Mortland (U.S.A.), U. Schwertmann (W. Germany).

2.2 *The Committee at large*

The following were nominated: N. Ph. Bondarenko (U.S.S.R.), S. W. Buol (U.S.A.), R. G. Burns (U.K.), M. De Boodt (Belgium), J. J. Fripiat (France), R. G. Gast (U.S.A.), S. Kiss (Rumania). M. M. Kononova (U.S.S.R.), N. Lahav (Israel), A. M. Posner (Australia), L. Raikov (Bulgaria), M. Schnitzer (Canada), J. M. Serratosa (Spain), H. Van Olphen (U.S.A.), K. Wada (Japan), and a representative from India to be nominated by J. S. Kanwar.

3. General discussion

A considerable amount of time was given to discussing views about the gaps in our knowledge of the composition and properties of soil colloid surface, of the ways in which the components are associated, of possible interactions between the individual colloidal particles, and some thought was given to investigation procedures. It must be emphasized, however, that the term surface must not be restrictively interpreted, and studies of the composition and properties of the bulk colloids is equally important. There follows a resumé of the discussions.

3.1 *The Nature of Soil Colloids*

It was recognised that the active surfaces in many soils might reflect a composite of the properties of a number of soil colloids, especially those of clay, organic, and of oxide materials. There was general agreement that structures of clay minerals are satisfactorily understood, but that this did not necessarily apply to soil clays, and in particular to clay materials of younger soils which often have complicated interstratified structures. However, even in the cases of clay minerals, our knowledge of their surface properties in thick pastes is limited because most studies have been carried out with dilute suspensions. There has been relatively slow progress in understanding the nature of clay (or oxide) particle interactions in concentrated or condensed systems. It was recognised that there are considerable difficulties in obtaining interpretable data from investigations of the properties of thick pastes or suspensions, although useful information, particularly with regard to diffusion and adsorption properties can be obtained from working with columns. Modern neutron scattering and NMR spectroscopy techniques are giving more refined data on the diffusion and conformations of interlamellarly adsorbed water and simple organic molecules in the interlamellar spaces of clays, but these techniques have shortcomings when large amounts of interstitial (interparticle) water or adsorbate are present.

The importance of domains, microaggregates, and of aggregates was recognised. It was noted that

aggregates from different soils can require different energy inputs for dispersion, and reference was made to the influence of aggregate structure and particle arrangement in restricting access to internal adsorption sites, and in diffusion and equilibrium processes. However, it was agreed that studies of the behaviour of such structures was best suited to the interest of soil physicists, and that soil chemists might be concerned with the particle to particle interactions at relatively short distances which give rise to the interfacial forces which cause the particles to associate.

Significant progress is being made in synthesis of oxide-hydrous oxide materials. For instance goethites can be synthesized in the laboratory with properties which approach those of soils. However, clarification is needed of the composition and structures of the variety of soil oxide components. An approach which might be considered, for instance, could involve synthesis of say goethites in the presence of silicon and aluminium, and observations of how the surface properties of the synthesis products might vary with composition. An extension of this approach might compare the binding products of such synthesis products with soil colloids whose adsorptive properties are considered to be dominated by the oxide components. This theme is further developed in Section 3.2.

In so far as soil organic matter is concerned, humic substances and soil polysaccharides are the most active of the organic colloids in soil processes. The role of polysaccharides in aggregation and in the stabilisation of aggregates has received considerable attention. However, the mechanisms of interaction between these polymers and other soil colloids will not be well understood until more is known about their secondary (the sequence of monomer units) and tertiary (shapes) structures. The monosaccharide components can be quantitatively determined without difficulty, but most of the structures studied until the present time are complicated by the presence of non-sugar components in the relatively impure products investigated. Nevertheless we can feel confident that techniques are available which allow a better understanding of the structures of soil polysaccharide materials, and advances in the theory, measurement and analysis of polymer adsorption data will lead to a better understanding of the mechanisms of binding of such polymers to other soil colloids.

Our appreciation of the structures of humic substances is even less clear. Some ideas about their primary structures can be obtained from products identified from improved degradation procedures and from functional group analysis. But effort must be directed to finding procedures which will degrade high percentages of the polymer molecules to products which can be related to possible structures in the polymer. Since the synthesis of humic substances may not be genetically controlled (as are proteins and polysaccharides, for instance) it is possible that no two polymer molecules are identical. Hence detailed investigations of secondary structures would not be meaningful. However, accurate qualitative and quantitative determinations (or deductions) of the primary structures could lead to the predictions of plausible secondary structures which might help our understanding of the surface, chelation, and adsorptive properties of humic substances. Such properties, of course, are strongly influenced by the tertiary structures. The random coil theory for the conformation of sodium humate molecules in solution is based on sound experimental evidence. But any appreciation of the conformations adopted by the more likely di- and polyvalent cation-exchanged humic substances under soil conditions must still be speculative. Some ideas about such conformations might be obtained from studies of diffusion and adsorptive properties of samples of humic substances exchanged with different metal cations.

The group recognised that clay, oxides, and humic substances can each have an independent existence in the soil, and they also can be associated to form complex colloidal particles having very complicated surfaces. The adsorptive properties of such complex assemblages will be governed by the exposed surfaces. It was agreed that our understanding of the criteria which bind oxides to clays and of the mechanisms and extents of such bindings are very imperfectly understood. The same lack of information applies to the mechanisms of clay- and of oxide to humic substances binding processes. A better knowledge of the nature of these associations is fundamental to progress in understanding the binding and release of plant nutrients, and for the binding of pesticides and of pesticide residues, and of heavy metals.

Attention was given to our lack of information about the reactions of microorganisms at the soil colloid/soil water interface. Water, substrates, inorganic nutrients, metabolites and microorganisms themselves accumulate at this interface. Quoting from the communications of R. G. Burns, 'microorganisms perform their degradative and synthetic roles predominantly at surfaces, and not whilst suspended in the soil aqueous phase'. Microorganisms, depending on the charges on their cell walls, the nature of the extracellular polymers which they secrete, etc. can be loosely held at or in the region of the soil surface, or they can be tightly held as stationary cells. It is well known that many biological transformations of substrate are accelerated in the presence of montmorillonite, especially. Although the mechanisms are not yet resolved it would appear that the binding of toxic metabolites by the clay plays an important part.

Humus forms stable complexes with a wide variety of naturally-occurring compounds, including proteins, and the concept of enzymes being trapped in the organic colloids finds favour. Although clays might aid the stabilization process by immobilizing the organic colloids they may have little direct effect on the enzyme. Since many organic molecules in soil are small enough to penetrate into fine pores they may not be readily accessible to microorganisms and so the involvement of extracellular enzymes in the transformation of such molecules may be greater than is currently recognised.

Such areas, of course, are among the many which require research exploration. It would also appear to be highly relevant to know to what extent adsorbed microbial cells contribute to the coverage of surfaces of soil

colloids, and how such coverages influence the physico-chemical as well as the biological processes which take place at these durfaces.

3. 2 *Studies with Model Systems*

Recognition of the composite nature of many soil colloid surfaces focused attention on the usefulness of model studies for investigations of the properties of soil colloids. For instance, studies of surface composition and characteristics could be carried out using the total soil colloid, and with the residual colloidal materials after removal of, say, the organic materials, and of the organic materials, plus oxides. Also, the clay silicates can be removed in order to concentrate on the oxides. It was emphasized, however, that this approach would require at least further refinement of the 'stripping' techniques which are now available in order to avoid forming artefact surfaces.

A complementary approach would prepare 'synthetic' soil colloid surfaces from clays, oxides, and organic materials, and the properties of these substances could be compared with appropriate isolates from soil. A better understanding of the associations between the different components in the mixture is needed. (In this context it is worth pointing out that there is a good understanding of the mechanisms of binding of polar organic molecules to clays, but not of the binding to humic substances to soil clays.)

In developing the concept of models some consideration was given to a 'black box' approach. One example of this might be, for instance, to develop a series of equations from the solution properties of different soils, and to fit data from a particular soil system to these. Data which satisfy the equation for a particular system might indicate similarities in properties between two systems. However, this approach was considered to be unrealistic at this time, and it was thought that a 'grey box' approach would be more meaningful. An example might be as follows. Observe how particular fertilizer treatments react in different soils. Make note of differences in behaviour, and try to relate these differences to, say, iron or aluminium oxides, or to particular combinations of oxides in a structure. Through the accumulation of data along such lines it might be possible to construct a meaningful model through which soil chemical and physical properties could be better defined.

An extension of this approach could be to attempt a laboratory synthesis of oxides (for instance) of similar composition to those responsible for an observed response in soil. Then, by altering the contributions of Fe, Al, etc. to the structures, it might be possible to isolate the particular component of the structure responsible for the response.

In so far as synthesis of oxides is concerned, it is now possible to produce goethites which resemble soil goethites both morphologically and compositionally.

3.3 *Reference Samples*

It was agreed that it would be highly desirable to have a soil bank, or a set of reference soil samples which could be used by all who research in the area of soil colloids. From the experience of those involved with the clay minerals bank, it is likely that it would be impossible to get all research workers to follow set procedures for isolating and handling the colloidal components of the reference soils. But it is hoped that research workers would at least take heed of instructions which state what *not* to do in so far as pretreatments, etc. are concerned.

3.4 *Soil Plant Relationships*

Reactions at the soil colloid/plant root interface were briefly considered. Although the Group was aware of the importance and the relevance of this area, it was felt that the complication of the chemical reactions at this interface by biological processes and phenomena placed such studies outside of the areas of expertise of persons who might be involved with the initial stages of studies of soil surfaces.

4. Topics for consideration

As the result of the discussions in Section 3 the following six headings were regarded as areas which should be given special consideration.

1. The collection of a reference bank of soils and of oxide materials.
2. Studies of the nature of the organic components of soil colloids, including microorganisms and microbial products, and of the associations between these organic materials and the soil inorganic colloidal constituents.
3. Studies of the composition and structures of soil oxides, of the extents and mechanisms of associations between these and clays and humic substances, and of the surface properties of these. Such studies would involve considerable effort in the synthesis of oxides with compositions and properties approaching those of soils.
4. Investigations of modern techniques of surface science which would be of value for comparisons between colloids from different soils, and between synthetic oxide- and soil-oxide materials.
5. Investigations of the uses of model systems which would lead to predictions of the surface composition and properties of soils from comparisons of the reactivities of the soil and the model. Consideration should be given to appropriate procedures for comparing the model with the real system.
6. Studies of interparticle forces between soil colloids at short distances. This might be regarded as a study of natural 'cementation phenomena' in soils.

4.1 *Position Papers*

The meeting was of the opinion that a number of 'position' papers are needed to summarise our state of knowledge with regard to aspects of the areas listed in Section 4. Thus the following topics were assigned.

1. Soil mineral colloids (by A. Herbillon)
2. Organo-minerals association and interactions (M. H. B. Hayes and R. S. Swift)
3. Microorganisms and their effects on soil colloid surfaces (R. G. Burns)
4. Components of acceptable models for soil colloid studies (G. Bolt)
5. Synthesis of models (U. Schwertmann, R. Taylor, and A. Cremers)
6. Techniques for studying soil colloid surfaces (J. J. Fripiat)
7. Short range interparticle forces in soil colloid systems (R. Prost and J. M. Serratosa).

5. The raising of funds

It was considered unlikely that organisations will be willing to give financial support to the effort before clear statements of the objectives are made, and before problems are outlined for which solutions of practical importance can be expected. Undoubtedly, well designed programmes could have considerable appeal, particularly since these would focus the attention of scientists in a number of laboratories on aspects of research programmes designed to solve particular problems. It would, however, be pointless to design any project in detail until the 'position papers' have been drawn up and commented upon by soil scientists at large. In this way the opinions of several persons will contribute to project proposals.

Take, for instance, soils with oxic properties which compose much of the world's tropical soils. Because of their importance, the study of the colloids and colloidal properties of such soils might form one excellent 'launching pad' for the principles of cooperative research which are embodied in objectives of this meeting. Several foundations are involved at the present time in the development of agriculture on such soils in different parts of the world. It would be highly desirable to convince those who sponsor research in areas where soils have oxic properties that these researches would benefit greatly through results from subproject studies (carried out where appropriate expertise exists in various laboratories throughout the world) on the composition and surface properties of such soils.

Inevitable it is likely that many of the research projects which may be designed will have a 'service aspect' to appeal to industry, and to environmental agencies, for instance. This is not undesirable, because finding solutions to practical problems can lead to advances in our knowledge of the fundamental science of the systems.

Therefore, after the 'position papers' have been commented upon it is proposed to design sensible projects which will involve collaborative scientific efforts. Subsequently national, international, and industrial organisations will be approached to support these projects. No decisions were made at this meeting about the ways in which the raised money would be distributed.

This group will lend support to relevant worthwhile projects from scientists who seek funds from within their own national grant-awarding authorities. It will also help to set up encourage collaboration where interests overlap between laboratories in different countries. It is hoped that such collaboration might enhance the prospects of proposals for local support.

Considerable sources of funds are available in the form of studentships and fellowships in several countries. Consideration must therefore be given to encouraging persons with the appropriate abilities to apply for these grants.

6. Summary

After some general discussion about the problems associated with understanding the composition and properties of soil colloid surfaces, consideration was given to establishing a reference bank of soils and of oxides, and to areas of relevant research which would help to advance our knowledge of such surfaces. In order to raise funds for research it was considered highly desirable to design appropriate projects which could be presented, according to their interests, to national and international funding organisations, and to sections of industry. These projects would set out to solve a problem of general or of local interest, and would involve the collaboration of scientists in a number of laboratories.

The design of research projects and sub-projects will be facilitated by information in 'position papers', written by selected authors, which will outline what is known about certain topics and will emphasize the information which is lacking in the areas. These 'papers' will be widely circulated and comment invited before projects are designed.

Therefore a two stage approach is being adopted. The first stage, involving the collection of information, is underway and will be completed when sufficient information and data have been compiled to allow the design of projects which can be expected to appeal to funding organisations. The seconds stage will involve the raising of funds and the distribution of these to laboratories where contributions to the aims of a particular study can be expected. Consideration has not yet been given to procedures which might be used to select laboratories.

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INTERNATIONAL RELATIONS
RELATIONS INTERNATIONALES
INTERNATIONALE VERBINDUNGEN

International Soil Classification Workshop held in Malaysia and Thailand

Soil Taxonomy, the system of soil classification published by the Soil Conservation Service of the U.S. Department of Agriculture in 1975, was basically developed to provide satisfactory placements for the soils of the United States and Puerto Rico. The system nevertheless has the inherent quality and potential to be applied universally. In fact, many countries – particularly in Latin America and Southeast Asia – are using Soil Taxonomy, either in lieu of or parallel to national schemes of classification. It is becoming increasingly evident, however, that Soil Taxonomy has certain deficiencies regarding tropical and subtropical soils.

For some time the University of Puerto Rico (UPR) has been concerned with the improvement of Soil Taxonomy relative to the taxa established for soils of the lower latitudes under grants from the U.S. Agency for International Development. UPR's approach is to collaborate with international committees established for the re-examination of relevant aspects of Soil Taxonomy, and to hold workshops with field tours in countries where the soils under scrutiny can be studied in the field. National institutions are centrally involved in these endeavours.

The first international soil classification workshop was held in Brasil in 1977 and dealt with tropical Alfisols and Ultisols (see ISSS Bulletin No. 52, p. 50–51). This subject matter is the main thrust of the International Committee for the Classification of Alfisols and Ultisols with Low Activity Clays, ICOMLAC. One of the resolutions of the Brazil workshop was to scrutinize the classification of Oxisols and subsequently the International Committee on the Classification of Oxisols, ICOMOX, was formed.

Another recommendation was to organize future meetings of a similar nature. In response, the second international soil classification workshop was held in Malaysia and Thailand from 28 August to 9 September 1978. The workshop was the result of exceptionally effective international cooperation: It was co-sponsored by the Department of Agriculture of Malaysia, the Land Development Department of Thailand, the University of Puerto Rico, the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), and the U.S. Agency for International

Members of the soil classification workshop, studying a Thailand soil with 'kandic' characteristics.

Development (AID). The U.S. University Consortium on Soils of the Tropics – notably Cornell University and the University of Hawaii –, the Soil Conservation Service of the USDA, and the University of Ghent, Belgium, provided valuable technical assistance. The workshop was financially supported by AID through a grant to UPR and by the host countries.

Professor F. H. Beinroth served as overall chairman of the workshop. In close cooperation with colleagues and Government institutions from the host countries, vice-chairman Dr. H. Eswaran of the University of Ghent and then Visiting Professor at Cornell University, developed an excellent program for the event. Dr. S. Paramananthan, Head of the National Soil Survey of Malaysia, and Mr. S. Panichapong, Director of the Soil Survey Division of the Land Development Department of Thailand, and their respective staff must be highly commended for superior organization of the conference sessions and field trips. The hospitality in both countries was overwhelming.

The workshop was attended by an exceptional group of internationally renowned pedologists representing multinational institutions, universities and various government agencies from fourteen countries. It also enjoyed the active participation of an equal number of soil scientists from the host countries. The presence of Dr. Guy D. Smith, the principal author of Soil Taxonomy, was of particular impact.

The Malaysian part of the workshop focused mainly on the mandate of ICOMLAC and the Thai part on that of ICOMOX. Thirty technical papers were presented on these subjects in four days of conference sessions. Eight days of field trips, three in Malaysia and five in Thailand, allowed the examination of theoretical concepts in view of the real world of soils. Twenty-six carefully selected pedons were studied in the field.

By all accounts the workshop was an unqualified success. While several problems remain to be resolved, real progress was made on the improvement of the classifications

proposed in Soil Taxonomy for soils that are extremely extensive in intertropical and subtropical regions of the world. As one participant put it: 'The workshop was a great experience. I enjoyed it very much; especially because we are making progress'.

The proceedings of the workshop will be published in two volumes by the Land Development Department of Thailand. They will include the papers presented; site and profile descriptions; analytical, mineralogical and micromorphological soil data; and a summary of the discussions. The proceedings should constitute an excellent reference publication for Southeast Asia and for general international soil correlation work.

The workshop not only achieved its immediate objective of critically examining the taxonomy of certain classes of tropical soils, it also formulated a series of recommendations relative Soil Taxonomy and associated subjects that may well serve as the framework for future international activities in soil classification. Among the recommendations were to hold similar workshops in the Near East and Africa, and to establish new committees on volcanic ash soils and on moisture regimes in tropical areas. The U.S. Soil Conservation Service subsequently formalized the two new work groups and thus four international committees on Soil Taxonomy are now in existence:

International Committee on the Classification of Alfisols and Ultisols with Low Activity Clays (ICOMLAC)
Chairman: Prof. Dr. F. R. Moormann, Soils Department, State University of Utrecht. Princetonplein 5, Utrecht 2506, The Netherlands

International Committee on the Classification of Oxisols (ICOMOX)
Chairman: Dr. Hari Eswaran, Geologic Institute, University of Ghent, Krijgslaan 271, 9000 Ghent, Belgium

International Committee on the Classification of Andisols (ICOMAND)
Chairman: Dr. Mike Leamy, Soil Bureau, D.S.I.R., Private Bag, Lower Hutt, New Zealand

International Committee on Soil Moisture Regimes in Tropical Areas (ICOMMORT)
Chairman: Prof. Dr. Armand Van Wambeke, Department of Agronomy, Cornell University, Ithaca, New York 14853, USA

Those interested in obtaining further information on the work of these committees are invited to contact the respective chairmen.

F. H. Beinroth, University of Puerto Rico

The 'Agro-ecological Zones' Project of FAO

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 so' is a key question, but there is presently little specific information 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: (a) different crops (with widely differing climatic and soil requirements, e.g. millet and potato) and (b) different levels of inputs and technology (e.g. subsistence cultivation and commercial production). Such factors must be taken into account to arrive at realistic estimates of the agricultural production potential of the various lands of the world.

Recognizing these facts the Soil Resources, Management and Conservation Service (AGLS) initiated, in September 1976, a two-year study of potential land use by agro-ecological zones, to obtain a first approximation of the production potential of the world's land resources and so provide the physical data base necessary for global and regional planning of future agricultural development. Initially the project deals with rainfed production potential, at two levels of inputs, for 11 main crops in developing countries. The 11 crops considered are pearl millet, sorghum, maize, rice, wheat, phaseolus bean, soybean, cassava, sweet potato, white potato and cotton.

The study is based on the 1:5000000 FAO/Unesco Soil Map of the World and uses most of the land evaluation principles and concepts developed over the past eight years by the FAO and Dutch groups. In essence the methodology comprises:

i. Division of the crops of the study into five groups based on differences in their photosynthesis pathways and the response of phytosynthesis to temperature and radiation;
ii. Assemblage of information on the soil requirements of the 11 crops, at each of the two levels of inputs envisaged;
iii. Compilation of a quantitative climatic inventory (1:5000000) based on major climatic divisions (temperature differences) and lengths of growing periods (time when water and temperature permit crop growth) from climatic station data (730 stations in Africa);
iv. Computer assemblage of the soil inventory through inputs, by countries, of the extent and composition of the mapping units of the FAO/Unesco Soil Map of the World;
v. Overlay of the climatic inventory on the soil map and area measurement of resultant climatic/soil units (agro-ecological zones);
vi. Computer calculation (from iv and v) of country extents of soil units (by slope class, texture class and phase) by major climatic divisions and lengths of growing period zones (30 days intervals);
vii. Matching of the climatic inventory (iii) with the crop groups (i) and, where the crop group requirements are met, calculation of biomass and constraint-free individual crop yields by lengths of growing period zones;
viii. Matching of the soil requirements of crops (ii) with the soil units, slope classes, texture classes and phases of the soil map, by rating the soil limitations with regard to individual crop production at each of the two levels of inputs;

ix. Compilation and rating of the various agro-climatic constraints to crop production occurring in the various major climatic divisions and lengths of growing period zones (iii);
x. Application of these agro-climatic constraints (ix) to the constraint-free crop yields (viii) to arrive at anticipated (agro-climatically attainable) crop yields, by lengths of growing period zones;
xi. Estimation of cost/benefit ratios of production from the different lengths of growing period zones, as related to anticipated crop yields;
xii. Agro-climatic suitability classification of each length of growing period zone according to anticipated crop yields (x) and (partly) economic benefits;
xiii. Computer application of the soil limitation ratings (viii) on the agro-climatic suitability classification of each length of growing period zone according to the soil composition of the zone, to arrive at the land suitability assessment i.e. extents of land variously suited to the production of the crop at each level of input.

Stages vii and xiii are carried out separately for each crop and stages viii to xiii for each crop and level of input.

Necessary inputs to this multicisciplinary study have been made by various Divisions of FAO.

The first report of the project has appeared as FAO World Soil Resources Report No 48. This first report presents a technical account of the overall methodology employed in the assessment (Part A) and combined results for the African Continent (Part B).

In the results part of the report, four pages are devoted to each of the eleven crops that were considered in the assessment. The first page comprises a generalized map of *agro-climatic suitability* for the crop under consideration. The three following pages show the results of the *land suitability* assessment, presenting data on the extents of land (1000 ha) variously suited to the production of the crop, by major climatic divisions and by lengths of growing period zones. Anticipated yields from the four land suitability classes employed are given for each major climatic division where the crop can be grown. The data is also presented by the two levels of inputs used in the assessment.

While the report will provide results for the African continent as a whole, the data being generated by the project can also be used for general appraisals of optimum land resource use at most individual country levels. This can be achieved by using the individual country climatic/soil inventory printouts (vi) and applying the agro-climatic suitability classification (xii) and the soil unit/crop ratings (viii) for each crop consecutively, in order of priority with regard to required increased in individuals crop production. Accordingly, copies of the data base (climatic/soil inventory printouts), as well as the individual crop suitability assessments, by countries, can be made available to government agencies on request, on completion of each regional report.

G. M. Higgins, FAO-AGLS, Rome
(Source: FAO Soil Service News no 3, July 1978)

The International Soil Museum Officially Opened

On 9 March 1979 the International Soil Museum (ISM), a Centre for Research and Information, was officially opened by Dr. M. Batisse, Deputy Assistant Director-General for Natural Resources and Environmental Sciences of Unesco, in the presence of about two hundred scientists, administrators and other parties from the Netherlands and abroad.

More than 27 years ago the first ideas for such a museum were formulated. In 1952 the late Secretary-General of the ISSS, Dr. F. A. van Baren, proposed in a report to FAO, to collect a series of samples from tropical soils as part of the activities of the Royal Tropical Institute, Amsterdam.

In 1960 a resolution was adopted at the 7th Congress of the ISSS, in which it was suggested to found an institute, where the soils mentioned on the proposed Soil Map of the World would be collected, fully analyzed and put on display for educational and research purposes. All reference materials underlying this map could be kept in the suggested international centre, which would provide information on the major characteristics and properties of the mapping units of the Soil Map of the World.

In 1964, at the 8th Congress of the ISSS, the desirability of such a soil museum was stressed once again. It was vizualized that such an institute would work in close co-operation with FAO and Unesco, complementing the Soil Map of the World Project. In the meantime Unesco included the museum in their activities in the field of earth sciences and at its 1964 General Conference, the Netherlands was selected to set up such a new institute.

On 1 January 1966 the ISM was founded. Dr. van Baren who had in the meantime been appointed professor of soil science at the University of Utrecht became its first director.

Since 1977 the ISM is housed in Wageningen in a new, specially designed facility, located on a building lot of the Agricultural University next to its Department of Soils and Geology and very near to the Soil Survey Institute of the Netherlands (Stiboka) and to the International Agricultural Centre (IAC).

The new building of the International Soil Museum at Wageningen, The Netherlands.

There was an obvious need for a sizeable and active support from Dutch soil research establishments to fulfil the tasks of the ISM. This need has led recently to the construction of a joint venture between the three organizations most closely involved, namely the International Institute for Aerial Survey and Earth Sciences (ITC) in Enschede, the Directorate of Research of the Ministry of Agriculture (DLO) and the Agricultural University in Wageningen. These three bodies are represented in the Board of Management, and all take their share in supplying logistic support for the running of ISM.

The scientific support from, and link with the many Dutch institutions involved in soil research is solidly anchored in a Dutch Advisory Council consisting of 15 representatives from all the institutions involved. Unesco established an International Advisory Panel, in which about 10 well-known soil scientists from all continents are elected on an ad-hoc basis. This IAP has met 3 times since 1966, most recently on 7 and 8 March 1979 coinciding with the inauguration of the ISM building.

At this occacion the IAP members were: Dr. Holzhey for N. America, Dr. Herrera for S. America, Prof. Aubert for W. Europe, Prof. Kovda for E. Europe, Dr. Peirera-Barreto for Africa, Dr. Osman for the Near East, Dr. Murthy for Asia, Dr. Swindale for Australasia and the CGIAR Institutes and Dr. Dudal and Dr. Fournier as representatives from FAO and Unesco respectively.

The ISM functions as a reference centre where background material and documentation on the soils of the world is available; a centre where soil scientists from any country may obtain information on soils of their interest; a centre which is activity engaged in the dissemination of data, on methods of soil characterization, soil classification and the transfer of soil technology.

The aims and programme of the ISM may be summarized as follows:

a) to collect, study and display illustrative sample material on the major soils
b) to be host to soil scientists who wish to study the reference collection
c) to publish on the collected material for world-wide distribution to national soil survey organizations, universities, etc.
d) to help in establishing national soil museums and national benchmark soil collections
e) to build up a systematic documentation on soil maps, the accompanying technical reports, related thematic maps and land suitability data.
f) to correlate soil classification systems that have an international reach.
g) to serve as a clearing-house for updating the Soil Map of the World, in cooperation with FAO
h) to compare classification-orientated laboratory methods and to check the reproducebility of analysis data
i) to study and collect soils under their natural vegetation and to keep track of the changes taking place under different types and degrees of human occupation.

On the occasion of the official opening, addresses were delivered by the chairman of the Board of Management of the ISM, its director, representatives of the ISSS, FAO and Unesco. The chairman of the Board of Management, Ir. R. P. H. P. van der Schans, welcomed the guests and representatives of several national and international institutions and sketched the history and the present organizational set-up of the ISM.

Dr. Ir. W. G. Sombroek, since June 1978 director of the ISM, gave an outline of the aims and programmes of the ISM as they have been summarized above.

Prof. Ir. A. J. van der Weele, rector of ITC in Enschede and acting-director of ISM for sometime after the death of Prof. van Baren, Prof. Dr. H. C. van der Plas, rector magnificus of the Agricultural University and Dr. D. de Zeeuw, director of research of

the Ministry of Agriculture delivered short well-wishing speeches on behalf of the three institutions cooperating in the Board of Management of ISM.

On behalf of the International Society of Soil Science Prof. Dr. E. Schlichting from the Institute for Soil Science of the Agricultural University in Stuttgart-Hohenheim, Chairman of Commission V, pointed to the connection between ISSS and ISM and sketched the position which an international soil museum should have within the community of soil sciences. At the end he offered a self-made soil profile from Lapland as 'birth-day' present.

Dr. R. Dudal, representing FAO in Rome, outlined the close ties that exist between FAO and ISM through the Soil Map of the World Project. He postulated some thoughts on the continuation of these ties, stating that the Museum must be a 'depository of the spirit of the Soil Map of the World'. According to him one of the main tasks of the ISM should be to carry on the spirit of dialogue which started within the Soil Map of the World Project and to reduce the gaps between different schools of thought in the field of soil science which are still tremendous. Moreover, the ISM should play a role as reference centre for updating the Soil Map and maintaining an up-to-date record of resources which are so important for the future of mankind.

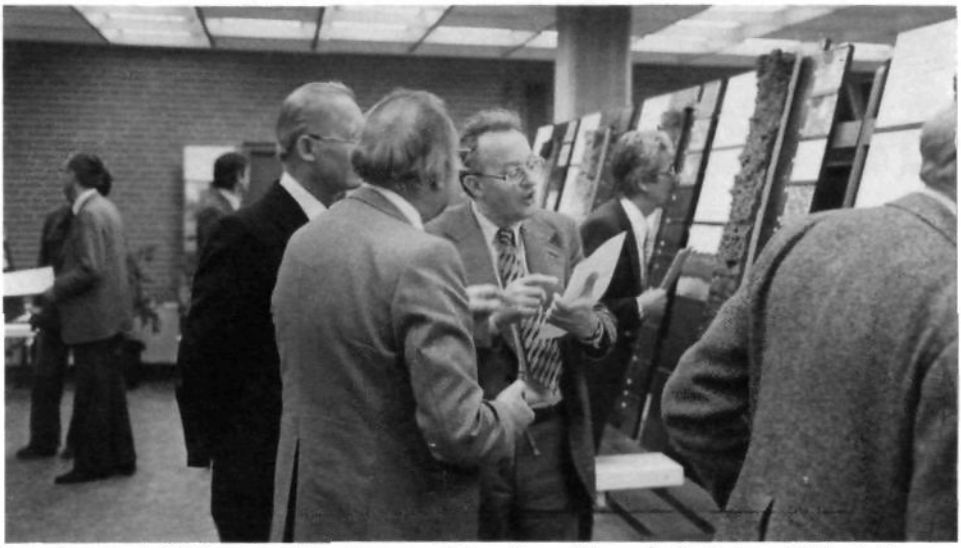
Like many others, Dr. Dudal paid tribute to Prof. van Baren, whose foresight was at the beginning of the Soil Museum.

He ended his address by ensuring that FAO will continue and strengthen its support to the Museum, which is, he believed, a project that can serve mankind and the developing world especially.

Prof. Dr. E. Schlichting, representative of ISSS, offering a 'Nanopodsol' from Lapland to Dr. W. G. Sombroek, Director of the ISM.

Dr. M. Batisse of Unesco, performing the official opening ceremony.

Dr. M. Batisse, representing Unesco in Paris, sketched the historical connections between Unesco and ISM, and the role ISM could play in the Man and Biosphere Programme (MAB) of Unesco. The approximately 150 Biosphere Reserves within the framework of the MAB Project, ranging from the tundra zone to arid and tropical rain forest zones, offer ISM the opportunity to collect representative soil monoliths from the many ecological and biogeographical zones. This collection will, reversely, be of



Attendants at the ISM opening, discussing some of the soil monoliths on display in the exhibition hall.

interest to the research people engaged in the MAB projects. The uniform analyses of these soils would enable the research people to compare soils from different biosphere reserves and thus contribute to a very precise evaluation of the obtained data.

After his opening speech Dr. Batisse officially inaugurated the International Soil Museum by unveiling its new emblem.

Those wishing to cooperate in the programme of the ISM or wishing to receive further particulars on the activities should apply to: Director ISM, P.O. Box 353, 6700 AJ Wageningen, The Netherlands. Cables ISOMUS, Wageningen.

H. van Baren/O. C. Spaargaren, ISM, Wageningen

Speech by the Representative of ISSS at the Opening of ISM *(original in German)*

According to the dictionary a *Museum* is a muses temple. For pedology only Klio can be considered as competent, and also the public opinion connects with 'museum' the idea of 'historic', thus of old things.

A *Soil Museum* indeed displays objects, which can be old, almost as old as the rocks from which they originate by a kind of metamorphosis at the earth's surface and to which they can be re-converted (soils are even documents of the earth's history, because they keep influences of past environments as relic features). This genetic aspect combines soil science with other geosciences. In spite of their often high age, soils determine very actively the recent happenings on the land surfaces as filtering bodies for atmospheric inputs and as sites of organisms, which they supply and from which they are influenced. This functional aspect combines soil science with several biosciences.

Since environment – organisms combinations are called ecosystems, a soil museum displays ecosystem-sections, grading downwards into rocks and being colonised by organisms from above. With these concrete objects the character of soil science as an ecological geoscience can be explained much better to the public than by abstract definitions. Moreover it can be made clear, that the science of the environment – organisms relationships, the ecology, is an interdisciplinary field of concerning geo- and

biosciences, and that the development in this field would be hampered by 'claims' (e.g. by those biologists who regard ecology as a part of biology). Since soils can be shown as landscape segments, this applies especially for landscape ecology. Therefore a soil museum can illustrate to the public the importance of soil science not only for the investigation of landscape history but also for the development of landscape functions, thus for understanding the past and for securing the future of mankind.

A soil museum also shows, that soils can be very different. In the public opinion there is *the* soil, which means just one. This idea of a farmer, working on a small property and keeping his experiences, would be reasonable and without consequences. It has fatal consequences, however, when soil scientists do not consider, that all statements at first are restricted to the soil which they investigated and can be transferred to other soils only if their similarity with the former is guaranteed. Thus a soil museum also shows to the soil scientists the objects of their discipline. This seems to be necessary in view of the tendency in soil science, to proceed not only with the specialization by differentiating the methods, but also with abstraction by restricting the investigations on single soil components or on simple model substances to such a degree, that finally the relation to soils as natural bodies is lost. Therefore a soil museum can show the specialists in soil science where their work should root. We must remember moreover, that abstraction can be the goal of a concrete research, but should not stand at its beginning.

An *International Soil Museum* on the one hand shows the great differences between the soils of different landscapes, but on the other hand also the similarities between soils of distant countries. Since the framework of thoughts in soil science was developed in several centres with restricted circles on the earth, the language of soil scientists from different nations does not differ only linguistically but pedologically as well. As a consequence of this, different soils can have been characterized and classified as being equal and equal soils as being different. Therefore it is welcomed that this museum not only collects objects and data, but also took the heavy task of international correlation. In this combination the foundation of an International Soil Museum as – if I am informed well – the first international soils institution is a very logic step on the way towards a better use of the global soil resources, since the spatial validity of statements concerning soil fertility problems and land use techniques and their transferability to other regions can be judged only, when soils of known distribution are investigated and classified sensibly.

The International Society of Soil Science is closely connected with the International Soil Museum in several ways. This was already pointed out by the preceeding speakers. But it certainly is adequate to stress once more the name *Van Baren*, since he was not only Secretary-General of this society for many years, but also an energetic promotor of this museum. ISSS thanks FAO, Unesco and the government of the Netherlands for establishing and further supporting this museum, since it already stimulated the soil research in the world and shall do so increasingly. As chairman of ISSS Commission V, which – like Commissions IV and VI – is concerned with real soils and not only with special methods or soil components, I am especially pleased to represent the society at the opening of this museum.

Personally I consider, like botanists do their discipline, soil science as a 'scientia amabilis' and, moreover, the soil scientists in the world as amiable colleagues, as a large family. Coming to such a family festival – in view of a birth time of 12 years I hesitate to call it a birth day – one should bring a present, a selfmade one, if one intends really to enjoy the other. Therefore I pass to you, Mr. Sombroek, for the museum a selfmade soil profile (one from Northern Sweden, since this is an international museum) and wish to the International Soil Museum a successful activity in the time of its growing up and of its maturity.

Prof. Dr. E. Schlichting, Chairman Commission V

LIST OF ISSS PUBLICATIONS/LISTE DES PUBLICATIONS DE L'AISS/ LISTE DER IBG VERÖFFENTLICHUNGEN

(International Congresses of Soil Science and Meetings of the Commissions and Working Groups; commission meetings before 1945 not indicated)

1st International Congress of Soil Science, 1927, Washington, U.S.A.
Proceedings (5 volumes) available from the Soil Science Society of America, 677 South Segoe Road, Madison, Wisconsin 53711, U.S.A.

2nd International Congress of Soil Science, 1930, Moscow, USSR.
Proceedings (7 volumes) available from the State Publishing House of Agricultural Cooperative and Collective Farm Literature, Selkolhozgis, Moscow, USSR (1933).

3rd International Congress of Soil Science, 1935, Oxford, England.
Proceedings out of print.

4th International Congress of Soil Science, 1950, Amsterdam, Netherlands.
Proceedings out of print.

Joint Meeting Commissions II an IV, Dublin, Ireland, 1952.
Proceedings (2 volumes) available from Dr. T. Walsh, Agricultural Institute, 33 Merrion Road, Dublin, Ireland.

5th International Congress of Soil Science, 1954, Léopoldville, Congo.
Proceedings (4 volumes) available from Société Belge de Pédologie, Krijgslaan 271, Gent, Belgium. Price: 1500 FB. Payment: bank draft. 200 copies are still available.

6th International Congress of Soil Science, 1956, Paris, France.
Proceedings out of print.

Meeting of Commission VI on *Supplemental Irrigation,* 1958, in Copenhagen, Denmark.
Proceedings, edited by E. W. Schierbeek under the title 'Report on the Conference on Supplemental Irrigation', available from the Institute for Land and Water Management Research ICW, P.O. Box 35, Wageningen, Holland.

Joint Meeting Commissions II and IV, Hamburg, 1958.
Proceedings, edited as 2 special volumes of the periodical 'Zeitschrift für Pflanzenernährung, Düngung und Bodenkunde' (1958, 1959), available from Verlag Chemie GmbH, Postfach 1260/1280, D-6940 Weinheim, West Germany.

1st International *Soil Zoology* Colloquium (Commission III), Rothamsted, England, 1958.
Proceedings, edited by P. W. Murphy under the title 'Progress in Soil Zoology' (1962), available from Butterworths & Co Ltd, 88 Kingsway WC2, London.

First Meeting of the ISSS Working Group on *Soil Micromorphology*, Braunschweig, Fed, Rep. of Germany, 1958.
Proceedings, edited by H. J. Altemüller und H. Frese under the title 'Arbeiten aus dem Gebiet der Mikromorphologie des Bodens' (1962), out of print by Chemie Verlag, Weinheim, but also Published in Volumes 97, 98 and 99 of the periodical 'Zeitschrift für Pflanzenernährung, Düngung und Bodenkunde'.

7th International congress of Soil Science, 1960, Madison, Wis., U.S.A.
Proceedings out of print.

Joint Meeting of Commissions IV and V, Palmerston, New Zealand, 1962.
Proceedings, edited by M. G. J. Neale under the title 'Transactions of joint meeting Comm. IV. and V of ISSS, International Soil Conference', available from: Publications Section, Science Information Division, DSIR, P.O. Box 9741, Wellington, New Zealand. Price: NZ$ 8.–. About 100 copies still available.

2nd International *Soil Zoology* Colloquium (Commission III), Oosterbeek, Netherlands, 1962.
Proceedings, edited by J. Doeksen and J. van der Drift under the title 'Soil Organisms' (1963), out of print with North Holland Publ. Co, Amsterdam.

8th International Congress of Soil Science, 1964, Bucharest, Rumania.
Proceedings (5 volumes) available from Societatea Nationala Romana Pentru Stiinta Solilui, Boul. Marasti Nr. 61, Bucuresti, Romania.

Second Meeting of the ISSS Working-Group on *Soil Micromorphology*, 1964, Arnhem, Netherlands.
Proceedings, edited by A. Jongerius under the title 'Micromorphology of Soils', available from Elsevier Scientific Publishing Co., P.O. Box 211, Amsterdam, Netherlands. Price: Dfl. 77,–.

Joint Meeting Commission II and IV, 1966, Aberdeen, Scotland.
Proceedings, edited by G.V. Jacks under the title 'Soil Chemistry and Fertility', available from Prof. J. Tinsley, Department of Soil Science, University of Aberdeen, Meston Walk, Old Aberdeen AB9 2 UE, Scotland, Price: UK£ 3.50. 90 copies still available.

Meeting Commission V on *Mediterranean Soils*, 1966, Madrid, Spain.
Proceedings available from Sociedad Española de Ciencia del Suelo, Serrano, 115, Madrid-6, Spain.

3rd International *Soil Zoology* Colloquium (Commission III), Braunschweig Völkenrode, BRD, 1966.
Proceedings, edited by O. Graff and J. E. Satchell under the title 'Progress in Soil Biology' (1967), available from Friedrich Vieweg & Sohn, Braunschweig, and North Holland Publ. Co, Amsterdam.

9th International Congress of Soil Science, 1968, Adelaide, Australia.
Proceedings (4 volumes) available from Angus & Robertson, Ltd., 221 George Street, Sydney, N.S.W. 2000, Australia.

Meeting of Subcommission on *Salt-affected Soils*, 1969, Yerevan, Hungary.
Proceedings, edited by I. Szabolcs et al. under the title 'Symposium on the Reclamation of Sodic and Soda-Saline Soils' (as vol. 18 (1969) supplement of 'Agrokémia es Talajtan') available from the Hungarian Research Institute of Soil Science and Agricultural Chemistry, Hermann Ottó út 15, 1022 Budapest II, Hungary.

Third Meeting of the ISSS Working Group on *Soil Micromorphology*, 1969, Wroclaw, Poland.
Proceedings, edited by S. Kowalinski et al under the title 'Soil Micromorphology' (1972), available from Panstwowe Wydawnictwo Naukowe, Oddzinlwe Wroclawiu, Wroclaw, Poland, or Prof. Dr. S. Kowalinski, Academy of Agriculture, Dept. of Soil Science, ul Grunwaldska 54, 50-357 Wroclaw, Poland.

Joint Symposium of ISSS and INQUA on the *Age of Parent Materials and Soils*, 1970, Amsterdam, Netherlands.
Selected Papers, edited by D. H. Yaalon under the title 'Paleopedology; origin nature and dating of Paleosols' (1971), available from Israel University Press, Jerusalem, Israel.

4th International *Soil Zoology* Colloquium (Commission III), Dijon, France, 1970.
Proceedings, edited by d'Aguilar J. et al under the title 'Organismes du Sol et Production Primaire' (1971), as Ann. Zool. Ecol. anim., H.S. 71(7).

Joint Meeting Commission II and IV, 1971, New Delhi, India.
Proceedings (2 volumes), edited by J. S. Kanwar et al under the title 'International Symposium on Soil fertility Evaluation' (1972), available from the Secretary, Indian Society of Soil Science, I.A.R.I., New Delhi 110012, India. Price including shipping: US$ 22.– or Rs. 165.– Int. Money order or bankdraft. 50 copies still available.

Joint Meeting of Commission I and VI, 1971, Rehovot, Israel.
Proceedings, edited by A. Hadas et al. under the title 'Physical Aspects of Soil water and Salts in Ecosystems' (1973, as vol. **4** of the series 'Ecological Studies, Analysis and Synthesis'), available from Springer Verlag, Heidelberger Platz 3, 1 – Berlin 33, West Germany. Price: DM 99.– or US 49.50.

Joint Meeting Commissions V and VI on '*Pseudogley and Gley* – Genese und Nutzung hydromorpher Böden; Genesis and Use of Hydromorphic Soils', 1971, Stuttgart, West Germany.
Proceedings, edited by E. Schlichting and U. Schwertmann under the same title, available from Verlag Chemie GmbH, Postfach 1260–1280, D-6940 Weinheim, West Germany. Price: DM 150.–.

Meeting of the ISSS Subcommission A, 1971, in Sevilla, Spain on finalizing the Map of *European Salt-affected Soils.*
Proceedings, edited by I. Szabolcs under the title 'Salt-affected Soils in Europe' (1974), available from Martinus Nijhoff, the Hague, Holland and the Research Institute for Soil Science and Agricultural Chemistry, Hermann Ottó út 15, 1022 Budapest II, Hungary.

Fourth Meeting of the ISSS Working Group on *Soil Micromorphology*, 1973, Kingston, Canada.
Proceedings, edited by G. K. Rutherford under the title 'Soil Microscopy' (1974), available from The Limestone Press, Kingston (Ont.), Canada, or Prof. Dr. G. K. Rutherford, Dept. of Geography, Queens University, Kingston K7L 3N6, Canada.

5th International *Soil Zoology* Colloquium (Commission III), Prague, Czechoslovakia, 1973.
Proceedings, edited by J. Vanêk under the title 'Progress in Soil Zoology' (1975), available from W. Junk, the Hague and Academia, Prague.

10th International Congress of Soil Science, 1974, Moscow, USSR.

Proceedings (11 volumes) available from Institute of Soil Science and Agrochemistry, 142292 Putschino, Moscow Region, U.S.S.R. Price: 15 Roubles + postage. About 100 copies still available.
FAO/Unesco *Soil Map of the World project*, 1961–1974, in cooperation with ISSS.
Maps at scale 1:5.000.000 and explanatory texts prepared by the World Soil Resources Office of FAO, Rome and published by Unesco, Paris, 1978. All nineteen map sheets (ff 50.– each) and most of the ten explanatory text volumes (ff 35.– to 75.–) available from PUB, Unesco, Place de Fontenoy, 75700 Paris, France; the national Unesco sales agents; or the International Soil Museum, P.O. Box 353, Wageningen, Holland.
Explanatory text volume no I ('Legend'; 60 pages, ff 25.–) comprises an introduction to the Map, an explanation and correlation of the nomenclature, a description of the diagnostic horizons and properties and the phases employed, a definition of the soil units and a key. The Legend volume is in four languages: English, French, Spanish and Russian, the explanatory text volumes in English, French and/or Spanish.

First Meeting of the ISSS Working Group on *Soil Information Systems*, 1975, Wageningen, Holland.
Proceedings, edited by S. W. Bie under the title 'Soil Information System', available from PUDOC, P.O. Box 4, 6700AA Wageningen, Holland.

Joint meeting of Commissions I, IV, V and VI on *Savannah Soils of the Sub-humid and Semi-arid Regions of Africa and their Management, 1975*, Accra, Ghana.
Proceedings, edited by H. Obeng under the same title (1979), available from Director, Soil Research Institute, Academy Post Office, Kwadaso-Kumasi, Ghana. Price: U.S. $ 25.– for non-participants.

6th International *Soil Zoology* Colloquium (Commission III), Uppsala, Sweden, 1976.
Proceedings, edited by U. Lohm and T. Persson under the title 'Soil Organisms as Components of Ecosystems' (1977), available from NFR Editorial Service, Swedish Natural Science Research Council, Box 23136, S-10435, Stockholm, Sweden. Price 140 Sw Cr., including airmail postage.

Meeting of the ISSS Subcommission A, 1976, in Lubbock, Texas, on *Managing Saline Water for Irrigation Planning for the Future*.
Proceedings, edited by H. E. Dregne, titled 'Managing Saline Water for Irrigation' (1977), out of print.

Australian Meeting of the ISSS Working Group on *Soil Information Systems*, 1976, Canberra, Australia.
Proceedings, edited by A. W. Moore and S. W. Bie under the title 'Uses of Soil Information Systems', available from PUDOC, P.O. Box 4, 6700AA Wageningen, Holland.

Meeting of Commission I on *Amendments in Soil Conditioning*, 1976, Adelaide, Australia.
Proceedings, edited by W. W. Emerson, R. D. Bond and A. R. Dexter under the title 'Modification of Soil Structure' (1978), available from John Wiley & Sons, Chichester – New York – Brisbane – Toronto.

Second Meeting of the ISSS Working Group on *Soil Information Systems*, 1977, Varna/Sofia, Bulgaria.
Proceedings, edited by A. N. Sadovski and S. W. Bie under the title 'Development in Soil Information Systems', available from PUDOC, P.O. Box 4, 6700AA Wageningen, Holland (also available at the ISSS Secretariat).

Fifth Meeting of the ISSS Working Group on *Soil Micromorphology*, 1977, Granada, Spain.
Proceedings (2 volumes), edited by M. Delgado under the title 'Micromorfologia del Suelo' (1978), available from Prof. Dr. M. Delgado, Dept. de Edafologia, Facultad de Farmacia, Granada, Spain.

Meeting of Commissions IV and V on *Classification and Management of Tropical Soils*, August 1977, Kuala Lumpur, Malaysia.
Proceedings edited by E. Pushparajah under the title 'Proceedings of the International Conference on Classification and Management of Tropical Soils, CLAMATROPS' (1978, 850 p.), available from Malaysian Society of Soil Science, c/o Highlands Research Unit, P.O. Box 209, Klang, Selangor, Malaysia. Price: US$ 33.–.

Meeting of Commission IV on *Soil Environment and Fertility Management in Intensive Agriculture*, 1977, Tokyo, Japan.

Proceedings, edited under the same title, out of print with The Society of Science of Soil and Manure, Roona 2, Hongo 6-26-10, Bunkyo-ku, Tokyo, Japan.

Meeting of the ISSS Working Group on *Remote Sensing and Soil Surveys*, 1977, Rome, Italy.

Proceedings, edited by M. C. Girard under the title 'Pédologie et Télédétection', available from M. C. Girard, I.N.A., Paris-Grignon, Laboratoire de Pédologie, 78850 Thiverval-Grignon, France. Price: FF 70 or US $ 18.–. Also available at the ISSS secretariat.

11th International Congress of Soil Science, 1978, Edmonton, Canada.

Proceedings (3 volumes) available from the Department of Soil Science, University of Alberta, Edmonton, T6G2E3, Canada. Price, including shipping charges: Can. $ 12.– in Canada, Can $ 15.– in U.S.A., Can $ 18.– elsewhere. Int. Money Order or bankdraft.

Meeting of the Subcommission A on *Dryland-Saline-Seep-Control*, 1978, Edmonton, Canada.

Proceedings, edited by H. S. A. Vander Pluym under the title, available from Alberta Dryland Saline Seep Committee, Plant Industry Division, Agriculture Centre, Lethbridge, Alberta T1J 4C7, Canada.

7th International *Soil Zoology* Colloquium (Commission III), Syracuse NY, USA, 1979.

Proceedings, to the edited by E. A. Paul under the title 'Role of Soil Organisms in Reclamation of Disturbed Lands'.

Pedofauna, Bulletin international d'information sur biologie du sol/International News Bulletin on Soil Biology/Internationales Mitteilungsblatt über Bodenbiologie, of ISSS Commission III.

Edited and published by Dr. M. B. Bouché, INRS, BV 1540, F21034 Dyon-Cedex, France. The June 1978 issue is the 27th in the series. Numbers 1 to 22, issued between 1964 and 1976, were edited under the title 'Biologie du Sol/Soil Biology/Bodenbiologie', partly in two series: 'partie Zoologie' and 'partie Microbiologie'.

NEW PUBLICATIONS*
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Journal of Arid Environments, Academic Press. Quarterly, from March 1978.

This new journal will provide a forum for scientific and technical research work and reviews, concerned with the problems of desert environments. It will also contain book reviews, technical notes and short communications.

Subscription price: vol. 1 £ 14.50 (UK), $ 35.00 (elsewhere)

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

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Applied Science Publishers. Quarterly. ISSN 0309-586X.

This journal provides a forum for the interchange of experience in and ideas on organisation and administration between different countries, commodities, approaches to innovation or rural development. Agriculture for the present purpose includes non-farm land uses, e.g. forestry, recreation, fisheries, input and output processing and marketing, human nutrition, research, education and extension.

Types of contributions: research papers, review articles, case studies, book reviews, conferences and meetings, short communications.

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Agricultural Systems, an International Journal. Applied Science Publishers. Quarterly. ISSN 0308-521X.

Agricultural Systems is aimed at agriculturalists whether in research, teaching, or extension and advisory work and those concerned with the planned use of resources.

Agricultural systems are operated for many different purposes, from the making of money to the feeding of people, and they occur in many different forms all over the world. They involve many different products and the use of many different resources and each of these can be expressed in many different terms. Agricultural activity involves management and people and affects the entire community, whether they are directly or not.

Types of contributions: research papers, review articles, case studies, book reviews, reports of meetings and conferences, short communications and letters to the editor.

Subscription price and orders: as under Agricultural Administration

Soil Biology and Conservation of the Biosphere. Editor J. Szegi, 1977, Akadémiai Kiadó, Budapest. 424 p. ISBN 963-05-1273-4.

This volume contains the papers presented at the 7th Meeting of the Soil Biology Section of the Society for Soil Science of the Hungarian Association of Agricultural Sciences, held from 2-4 September 1975. Thirteen papers were presented under the topic 'Interaction between chemicals introduced in agriculture and soil organisms'. Other topics: the role of soil micro-organisms in the transformation of plant nutrients (9 papers); interaction between nodule bacteria and leguminous plants (6 papers); the role of soil organisms in the decomposition of plant residues (14 papers); soil organisms as components of the soil ecosystem (8 papers); and the role of soil organisms in the soil forming process (4 papers).

The Hungarian Soil Science Society has in the past successfully organized and sponsored numerous meetings on different problems of biological processes related to the fertility and agricultural utilization of soils. These meetings, included the present one attract many scientists, also from abroad.

Price: $ 26.00

Orders to; Kultura, P.O. Box 149, H-1389 Budapest, Hungary

Irrigation and Drainage Abstracts, Commonwealth Agricultural Bureaux. Quarterly.

This new abstract journal provides up-to-date information on water management, irrigation, drainage, soil-water relations, plant-water relations, salinity and toxicity problems, meteorological aspects and environmental aspects. It contains over 1500 abstracts per year.

Subscription price: $ 60.00 per annum (Member country rate £ 32.00)

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

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*Titles of new publications are listed here for information. Orders can however not be handled by the ISSS Secretariat but should be placed through a bookstore or directly with the publishers.

*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 libraire 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.

Studies on Soils of India, by S. V. Govinda Rajan and H. G. Gopala Rao, 1978. Vikas Publishing House, New Delhi. VII + 425. ISBN 0-7069-0568-7

This publication attemps to bring together a survey of research work that has been conducted on various aspects of the soils of India. After giving background information on the genesis and classification, a review is made of the work carried out in earlier periods to obtain scientific information about the soils. The present state of affairs and lines of future research work are given in chapters on soil physics, soil structure, moisture relationships, clay mineralogy. Problems on the utilization of plant nutrients and the amelioration of acid, saline and alkali soils are treated in about one-third of the book.

This well-written book, which could be regarded as a complement to the book Soil and Crop Productivity (1971) of the same authors, is of great interest to all who would like to be informed about a variety of subjects on the soils of India.

Price: Rs 45 *Orders to:* Vikas Publ. House, 5 Ansari Road, New Delhi 110002, India

Soils, Their Nature, Classes, Distribution, Uses, and Care, by J. W. Batten and J. S. Gibson, 1977. The University of Alabama Press. XI + 276 p. ISBN 0-8173-2876-9.

This revision of the 1970 edition retains most of material in an updated form. It contains chapters on the processes of soil formation, classification, distribution and use. This very readable contribution is clearly written in non-specialist language as a textbook for courses in geography in secondary schools and the colleges in the United States.

Treated in some detail are the soils of North Carolina. It contains also short descriptions and classifications of 163 important soil series of the US. The book concludes with a glossary of some technical terms.

Price: $ 10.00

Orders to: The University of Alabama Press, Drawer 2877, University, Alabama 35486, USA

Quantitative and numerical methods in soil classification and survey, Monographs on soil survey, by R. Webster, 1977, Oxford University Press, (x)+269 p., 63 figures, 27 tables, 160 refs., 1 App., ISBN 0-19-854512-6.

Interest in application of numerical methods to soil classification and survey has considerably increased in recent years. This book is an introduction into this field, and a review of many of the techniques applied so far. The main subjects are: statistical sampling and estimation, the role and construction of classifications, allocation of soil individuals to classes, ordination and mapping. In addition there are preliminary sections such as the one on data handling and computing, and on analysis of multivariate dispersion.

Nearly all methods discussed were developed in other sciences. However, many examples of application to soil data are provided in this book, and the author gives much attention to the special problems arising with such applications. The book is up to date, clearly written and well-edited. It leaves several questions unanswered, but it should be a very useful complication for all who are interested in this subject.

J. J. de Gruijter, Wageningen, The Netherlands

Price: £ 12.50

Orders to: Oxford University Press, Walton Street, Oxford OX2 6DP, England

Basic Biogeography. N. V. Pears. Longman, 1977, 272 p. ISBN 0-582-48400-6 (cased), 0-582-48401-4 (paper)

This is an introductory textbook to biogeography with a realistic approach to student requirements. Throughout the book emphasis is placed on plants rather than animals, though the relevance of the principles to animal communities is explained. Part One sets out clearly the basic principles of ecology, with examples from many parts of the world. Part Two concentrates on the vegetation and soils of the British Isles, examining selected examples in detail. Each chapter ends with a short discussion section where questions are posed and answered.

The book is written for first-year university students in general physical geography, students of environmental studies and those who need a basic understanding of ecological principles, evolution of the soils and vegetation. It is mostly concerned with the British Isles.

Prices: £ 8.50 (cased), £ 4.50 (paper)

Orders to: Longman Group, Burnt Mill, Harlow, Essex, England.

The Real Wealth of Nations. S. R. Eyre. Edward Arnold, London, 1978. 220 p. ISBN 0-7131-5970-7

This new book of Dr. Eyre, who is wellknown from his publication Vegetation and Soils, examines the world's organic and mineral assets, their output, consumption and distribution in relation to demographic trends and political patterns.

The author shows, for instance, how the gradual deforestation of the earth, already apparent in the timber shortage, has far deeper implications in terms of the total productivity of the land. If we are approaching the limit of organic capacity, non-renewable reserves are equally threatened.

Adam Smith's theory of wealth, resting on the assumption of vast, untapped riches, may be largely responsible for our own complacency. But the theme of this important book is that the earth's resources are finite and, indeed, that the ultimate survival of civilization depends upon their fair allocation. Dr. Eyre presents a new definition of the wealth of nations, firmly based on scientific knowledge and of immediate

relevance not only to geographers and others professionally concerned with resource usage but to all disturbed by the predicament of humanity.
Price: £ 7.95 net
Orders to: Edward Arnold (Publishers) Ltd., 25 Hill Street, London W1X 8LL, England.

Soil-Resource Data for Agricultural Development. Editor L. D. Swindale, Hawaii Agricultural Experiment Station, Hawaii, 1978. 306 p.

This publication is the outcome of the seminar entitled 'The Uses of Soil Survey and Classification in Planning and Complementary Agricultural Development', which was held at Hyderabad, India, from 18–23 January 1976. It was attended by 89 senior natural resource planners and soil scientists of 19 tropical and 9 temperate countries. The 23 papers delivered at the seminar were rearranged, revised and edited for a more effective presentation in written form.

The editor states in his preface that this book 'provides a state-of-the-art compilation of the classification, collection, interpretation and presentation of soil-resource data for land-use planning in tropical agriculture, and it gives some illustrative examples of effective use of soils data for agricultural development mainly in the tropics'. Topics discussed include the classification and collection of soil-resource data in land-use planning; in regional and national development; in transferring agricultural technology; special problems of the semi-arid tropics. The appendixes contain the addresses delivered at the seminar and a summary of discussions and recommendations. Please note that supply is limited and that copies are only available to libraries and institutions.
Orders to: Hawaii Agricultural Experiment Station, College of Tropical Agriculture, University of Hawaii, 3190 Maile Way, Honolulu, HI 96822, U.S.A.

Developments in Soil Information Systems. Editors A. N. Sadovski and S. W. Bie, Pudoc, Wageningen, 1978. 113 p. ISBN 90-220-0655-7.

This publication contains the proceedings of the second meeting of the ISSS Working Group on Soil Information Systems, held at Varna/Sofia, Bulgaria from 30 May to 4 June 1977. In all 27 papers were delivered. The meeting was attended by more than 60 scientists from Europe, Australia, Canada and Nigeria.

The report covers: description of operational soil information systems including those of Eastern Europe; FAO proposals for standardized (not yet finalized) soil coding; and applications for agricultural management.
Price: Dfl. 17.50
Orders to: Pudoc, P.O. Box 4, 6700 AA Wageningen, the Netherlands

Soils and Soil Fertility. L. M. Thompson and F. R. Troeh. McGraw-Hill, 1978, 516 p. ISBN 0-07-064411-X

This fourth edition of 'Soils Fertility' offers a practical, understandable survey of its subject, updated for a changing and expanding field. It is broad in scope yet includes the specialized information needed for a variety of environmental sciences, such as horticulture or forestry. The book is particularly concerned with the effects of different soil properties on the growth of plants and emphasizes the effects of relatively permanent soil characteristics such as water relations, organic compounds and mineral constituents. There is also a discussion of chemical amendments and fertilizer nutrients. Several chapters are devoted to the nature of soils: formation, physical properties and organic matter; and considerable space is devoted to soil classification and various aspects of land use, soil and water management, erosion control, and soil pollution.

Much of the material in 'Soils and Soil Fertility' is updated. The chapter on fertilizer usage and the chapter on soil classificiation have been revised to account for recent developments. And there are completely new topics such as the use of Soil Taxonomy.

'Soils and Soil Fertility' is intended for use as a text for the introductory course in soils for students in agriculture and related sciences.
Price: DM 50,40
Orders to: McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, NY 10020, U.S.A., and McGraw-Hill Book Company, Graf-Adolf-Strasse 100, D-4000 Düsseldorf 1, Germany.

Soil Sampling and Soil Description. J. M. Hodgson. Clarendon Press: Oxford University Press, 1978, 241 p., ISBN 0-19-854511-8

This small handbook in the series Monographs on Soil Survey provides a comprehensive review of the methods of soil and site description used in soil survey throughout the world. The author, who is Regional Officer, Soil Survey of England and Wales, discusses the problems by using these methods and show how to produce a proper description.

The first part of the book includes chapters on the description of the site and of general soil features, the soil description, the recording of site and profile data, and methods of sampling.

The second part summarizes the systems of descriptions used in 23 countries and by FAO.

The book is useful to field workers and students in soil science and related disciplines, as well as ecologists, agriculturalists and geologists.
Price: £ 10.00, net price in U.K.
Orders to: Oxford University Press, Walton Street, Oxford OX2 6DP, England

Einführung in die Bodenphysik. K. H. Hartge. F. Enke Verlag, Stuttgart, 1978, 364 Seiten, 142 Abbildungen, 16 Tabellen. ISBN 3-432-89681-6

Ziel dieser Abhandlung ist, die Lücke zwischen den Lehrbüchern der allgemeinen Bodenkunde und den sehr speziellen Lehrbüchen einzelner physikalischer Bereich wie Bodenmechanik und Hydraulik zu schliessen. Die Darstellung umfasst daher den gesamten Bereich der physikalischen Phänomene des Bodens, beginnend bei der Körnung über Eigenschaften der festen, flüssigen und gasförmigen Phase bis zur Wärme im Boden. Neben den Phänomenen selbst sind stets ihre Veränderungen in Raum und Zeit (Wasser-Luft-Wärmehaushalte, Erosion-Akkumulation, Filterwirkungen) dargestellt sowie Hinweise auf ihre Beeinflussbarkeit gegeben (Meliorationstechnologien).

Inhaltsübersicht:

Körnung; Gefüge, Statik und Dynamik der Lagerung; Wechselwirkungen zwischen Wasser und Boden; Verbreitung und Hydrostatik des Bodenwassers; Wasserbewegung; Wasserhaushalt im Boden; Gasphase im Boden; Thermisches Verhalten des Bodens-Pflanzenstandort und seine physikalische Veränderung; Erosion, Filterfunktion des Bodens.

Betrag: DM 24.80

Bestellungen: Ferdinand Enke Verlag, Stuttgart, BRD.

Essentials of Soil Study.

A. Faniran and O. Areola. Heinemann, London, 1978. 278 p. ISBN 0-434-95311-7

This introduction has been specifically written for students in soil geography at university level, but is also useful to students and teachers of other disciplines such as agronomy, forestry and geology. It contains chapters on the soil body and its properties and formation, the study of soil in the field and the laboratory, the global distribution of soils, soil-plant relationships and soil erosion and conservation. The language used is not too tehcnical. Many examples are drawn from African soils, especially West Africa. There are many tables and figures, but only three photographs.

Price: £ 4.10 net

Orders to: Heinemann Educational Books, 48 Charles Street, London W1X 8AH, England, or Heinemann in Ibadan, Nairobi or Lusaka.

Fundamentals of Soil Science.

H. D. Foth, 6th Edition. John Wiley & Sons, 1978. 436 p. ISBN 0-471-03522-X

This is an updated and partly enlarged edition of the well-known, comprehensive, introductory textbook.

It is desgined to help students evaluate national and international issues of soil resource conservation, land use, environmental quality, and food production. It emphasizes current environmental topics, including a discussion of forest soils, plant composition and animal health, and soil water management. Readership includes students and lectures in soil science and agronomy.

Price: $ 16.95

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

A Dictionary of the Natural Environment. F. J. Monkhouse and J. Small. Edward Arnold, 1978. 320 p. ISBN 0-7131-5958-8 (paper ed.) and 0-7131-5957-X (cloth ed.)

In a Dictionary of Geography, published in 1970, Professor Monkhouse was able to incorporate all aspects of geography. The present book is more limited in scope, since it only includes the 'physical' material. However, the volume of the text has been expanded. This comprehensive dictionary is a very practical reference work for students and teaching staff of geography and environmental sciences. The entries are fully cross-referenced and illustrated with maps, diagrams and also with photographs.

Prices: £ 2.95 (paper); £ 8.95 (cloth)

Orders to: Edward Arnold (Publishers) Ltd, 25 Hill Street, London W1X 8LL, England.

Environmental Systems; Philosophy, Analysis and Control. R. J. Bennett and R. J. Chorley. Methuen, 1978. 648 p. ISBN 0-416-71020-4

The 'environment' is interpreted by the authors of this book in the broadest sense, to embrace its physical, biological, man-made, social and economic characteristics. They employ a multi-disciplinary approach which is completely original in its vision of a synthesis of socio-economic *and* physico-ecological systems.

Part I develops the philosophical and technical concepts by which systems can be conceived and described. Part II explores the cognitive foundations of decision making. In Part III the authors evaluate the analysis provided by a wide range of physical, ecological, social and economic systems, and discuss how such systems might be synthesized. The final part of the book draws together all the strands of this multi-disciplinary approach by applying it to the dilemmas which confronts man's intervention in natural systems and his 'living together' with nature.

Price: £ 33.00 (hardback)

Orders to: Methuen & Co, North Way, Andover, Hants. SP10 5BE, England.

Forest Soils, Properties and Processes. K. A. Armson, University of Toronto Press, Toronto, 1977. ISBN 0-8020-2265-0

This is a comprehensive textbook for foresters, wildlife and park managers, ecologists and others with an interest in forest soils. The arrangement of the text should make it suitable both for an undergraduate introductory course in forest soils and for use in a more advanced programme. The first ten chapters deal with basic information such as physical and chemical properties, soil water, organic matter, soil biology, fertility, soil classification and survey. The last six chapters consider the components of the forest-soils system primarily in terms of related processes, discussing roots, fire, water and nutrient cycles as they exist in natural forests and as they are modified by man.

The author, who is professor in the Faculty of Forestry and Landscape Architecture, University of Toronto, examines the processes of forest soil development, and the place of soil as a part of a continuously changing landscape from both the historical and ecological viewpoints.

Price: Can $ 22.50

Orders to: University of Toronto Press, Toronto, Canada M5S 1A6

Bodemkunde in Stichworten. D. Schroeder. 3., völlig neu bearbeitete Auflage, 154 Seiten, 57 Abbildungen, 22 Tabellen, 6 vierfarbige Bilder. Verlag Ferdinand Hirt, Kiel, 1978. ISBN 3-554-80191.

Mit der von Prof. Dr. Diedrich Schroeder, Präsident der Deutschen Bodenkundlichen Gesellschaft, herausgegebenen 'Bodenkunde in Stichworten', wird das gesamte Stoffgebiet der Bodenkunde in übersichtlicher und gut gegliederter Form für alle in Studium, Lehre, Forschung und Beruf an dieser Wissenschaft interessierten dargestellt. Insbesondere werden Studenten und Absolventen der Universitäten und Fachhochschulen aus dem Bereich der Agrar-, Gartenbau- und Forstwissenschaften sowie der Bio- und Geowissenschaften, die sich mit Bodenkunde beschäftigen, durch diese Buchausgabe angesprochen. Daneben kann aber auch der interessierte Laie mit Hilfe der 'Bodenkunde in Stichworten' Zugang zu diesem Fachgebiet finden. Die klaren Formulierungen des Autors sowie zahlreiche instruktive Abbildungen und Übersichten ermöglichen ein gutes Verständnis des konzentrierten Textes.

In dieser nun erschienen dritten, neu bearbeiteten und erweiterten Auflage wurden auch neue, mit den Begriffen der Pedosphäre, des Pedons und der Pedotope verknüpfte Konzepte der räumlichen Gliederung der Bodendecke dargelegt. Ein neues Kapitel über die Bedeutung des Bodens im Umwelt-System des Menschen (Antropo-Ökosystem) als Filter-, Puffer- und Transformationssystem gegenüber Umwelt-Belastungen rundet diese zusammenfassende Darstellung des bodenkundlichen Fachwissens sinnvoll ab.

G. Brümmer, Kiel (Agrarspectrum Heft 1/78)

Betrag: DM 19.80

Bestellungen: Verlag Ferdinand Hirt, Postfach 2580, 2300 Kiel 1, BRD

The formation of soil material. T. R. Paton. George Allen & Unwin, London, 1978. 143 p. ISBN 0-04-631010-X.

This is a book on soil formation, written in relatively simple terms. It is based on extensive experience with soils in Australia, Malaysia and parts of Africa. 53 pages cover lithosphere composition, weathering, leaching, new mineral formation and soil fabric. The most interesting 42 pages deal with the processes of lateral surface movement (with 4 clear illustrations from case studies), and with the effects of the biosphere on weathering, leaching, mineral formation, soil fabric, and on lateral movement of soil material. The last third of the book discusses the factors of soil formation and summarizes the soil materials of the world in five pedological provinces. The emphasis throughout is on physical processes, part of which are not confined within a pedon but operate over larger geomorphic units such as a hillslope with the adjacent margin of a plain. Although the whole book is useful for undergraduate soils study, the central chapters particularly should find a wider readership. They give a more concise and coherent view of physical and biotic processes in soils and soil landscapes than has been available so far.

R. Brinkman, Wageningen

Price: £ 3.95 paperbound

Orders to: George Allen & Unwin, 40 Museum Street, London WC1A 1LU, England.

Quaternary Soils. Editor W. C. Mahaney. Geo Abstracts, Norwich, 1978. 508 p. ISBN 0-86094-012-8

This publication contains the 18 papers presented at the third conference on Quaternary Research held at York University, Toronto, from 21–23 May, 1976. It was attended by over 100 North American scientists. Topics included: soil dynamics, soil stratigraphy and soil morphogenesis.

A few papers are of a more general nature, most of them on Quaternary soils in the U.S. and Canada. The book contains many drawings, figures and photographs.

Price: £ 12 or $ 24.– (paperback only)

Orders to: Geo Abstracts Ltd, University of East Anglia, Norwich NR4 7TJ, England.

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

1979

Conference on soil-water problems in cold regions, Calgary, Canada, 19-20 September 1979.
Information: J. M. Luthin, Dept. of Land, Air and Water Resources, University of California, Davis, California 95616, U.S.A.

First OAU Inter-African Soil Science Congress, Accra/Kumasi, Ghana, 10–17 November 1979.
Information: Dr. H. B. Obeng, Director Soil Research Institute, Kwadaso-Kumasi, Ghana.

International Symposium on Hydrological Aspects of Droughts. 2–7th December 1979, New Delhi, India (sponsored by Unesco/WMO/IAHS – IUGG).
Information: Chairman Organizing Committee International Symposium on Hydrological Aspects of Droughts, Technology BHAWAN, New Mehrauli Rd. New Delhi 110029, India.

International Seminar on Lateritisation Processes. 1–14th December 1979. Trivandrum, India (sponsored by Unesco – IUGS).
Information: Secretary Organizing Committee International Seminar on Lateritisation Processes, c/o Geological Survey of India, 151, Nehru Nagar, Hyderabad, 500026 India.

Symposium on the Hydrology of Low Precipitation Areas. 10–15th December 1979, Canberra, Australia.
Information: W.M.O., P.O. Box 5, CH-1211 Geneva-20, Switzerland.

Workshop on Information Systems for Earth Sciences, Nairobi, Kenya, December 1979 (ISSS Working Group DP, jointly with COGEODATA, Kenya).
Information: Dr. J. Schelling, Netherlands Soil Survey Institute, P.O. Box 98, Wageningen, Holland.

Meeting on Cryogenic Soils, Oka, USSR (ISSS Working Group CS).
Information: Prof. Dr. O. V. Makeev, Institute for Agrochemistry and Soil Science, Putscheno-Moscow, USSR.

Workshop on the Preparation of a Map of Salt-affected Soils of Latin America, Venezuela (ISSS Subcommission A, in cooperation with the Venezuelan Society of Soil Science).
Information: Dr. I. Pla Sentis, Apartado 189, Maracay, Venezuela.

1980

Symposium on Principles and Practices for Reclamation and Management of Salt-affected Soils, Karnal, Haryana, India, 18-21 February 1980 (ISSS Subcommission A).
Information: Dr. J. S. P. Yadav, Central Soil Salinity Research Institute, Karnal – 132001, Haryana, India.

5th International Congress on Soilless Culture, Wageningen, Netherlands, 18-24 May 1980.
Information: Secretariat ISOSC, P.O. Box 52, 6700 AB Wageningen, The Netherlands.

Scientific manifestation of the 'Commission Internationale de Génie Rural' (CIGR). General theme: 'Evolution of research in agricultural engineering'. 12–15th February 1980, Brussels, Belgium.
Information: Prof. P. F. J. Abeels, Département de Génie Rural, Faculté des Sciences Agronomiques, Université Catholique de Louvain, Place Croix du Sud 3, B-1348 Louvain-La-Neuve, Belgium.

International Symposium on the Application of Recent Developments in Hydrological Forecasting to the Operation of Water Resource Systems. 14–18th April 1980, Oxford, England (sponsored by IASH, co-sponsored by WMO and Unesco).
Information: Institute of Hydrology, Wallingford, Oxon, U.K.

14th International Symposium on Remote Sensing of Environment, San José, Costa Rica, April 1980.
Information: Dr. Jerald J. Cook, Environmental Research Institute of Michigan, P.O. Box 8618, Ann Arbor, Michigan 48107, U.S.A.

International Symposium on Isotope and Radiation Techniques in Studies of Soil Physics and Irrigation in Relation to Crop Production, Vienna, Austria, 21–25 April 1980. (sponsored by IAEA and FAO).
Information: Mr. Y. Barrada, Joint FAO/IAEA Division of Atomic Energy in Food and Agriculture, International Atomic Energy Agency, P.O. Box 590, Kärntner Ring 11, A-1011 Vienna, Austria.

Workshop on Data Processing for Remote Sensing Applications, Lafayette, U.S.A., June 1980 (ISSS Working Groups RS and DP, with Purdue University Laboratory for Applications of Remote Sensing).
Information: Dr. M. Baumgardner, Dept. of Agronomy, Purdue University, Lafayette, IN 47907, U.S.A.

26th International Geological Congress, Paris, 7-17 July, at the Centre International de Paris, Palais des Congrès.
Information: Secretariat, 26th International Geological Congress, Maison de la Géologie, 77-79 rue Claude Bernerd, 75775-Paris, France.

International Conference on Soil Conservation, Silsoe, U.K., 21-25 July 1980.
Information: Dr. R. P. C. Morgan, National College of Agricultural Engineering, Silsoe, Bedford, MK454DT, U.K.

24th International Geographical Congress. 1–5th September 1980, Tokyo Japan.
Information: International Geographic Union, Geographisches Institut, Universität Freiburg, 78 Freiburg, Federal Republic of Germany.

Second International Symposium on Microbial Ecology, Warwich, United Kingdom, 7-12 September 1980 (ISSS Commission III).
Information: Dr. M. Fletcher, Dept. of Environmental Sciences, University of Warwich, 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.

18th General Assembly International Council of Scientific Unions. September 1980. Amsterdam, The Netherlands.

International Symposium on Land Evaluation for Forestry Purposes, Wageningen, The Netherlands. October 1980.
Information: Dr. K. J. Beek, ILRI, P.O. Box 45, Wageningen, The Netherlands.

International Symposium on the Management of Nitrogen in Relation to Crop Production, and the Environmental Impact of Fertilizer Usage, Vienna.
Information: Dr. F. W. P. Winteringham, IAEA, P.O. Box 590, A-1011 Vienna, Austria.

Symposium on Soil Problems associated with Irrigation in Arid Steppe and Savanne, Ghana or USSR (ISSS Commission VI).
Information: Dr. E. Egorov/Prof. V. Kovda, Dokuchaev Soil Institute, Pyjevski 7, Moscow 17, U.S.S.R.

Symposium on the Soils of the Humid Tropics and their Management, Ghana (ISSS Commissions IV, V and VI).
Information: Dr. H. Obeng, Soil Research Institute, Kwadaso-Kumasi, Ghana.

1981

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.

Symposium on Arid Soils, Jerusalem, Israel, April 1981 (ISSS Commissions V and VI).
Information: Prof. Dr. D. Yaalon, Department of Geology, the Hebrew University, Jerusalem 91000, Israel.

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 N1G 2W1, Canada.

International Working Meeting on Soil Micromorphology, London, United Kingdom, 17-21 August 1981 (ISSS Subcommission B).
Information: Dr. P. Bullock, Rothamsted Experimental Station, Harpenden, Herts. AL5 27Q, U.K.

11th International Congress on Irrigation and Drainage, Grenoble, France, August/September 1981.
Information: Secr. ICID, 48 Nyaya Marg, Chanakyapuri, New Delhi-110021, India.

Second International Symposium on 'Acid Sulphate Soils'. 12–17th January 1981, Bangkok, Thailand.
Information: S. Panichapongs, Secretary Second International Symposium on Acid Sulphate Soils, Department of Land Development, Bangkhen, Bangkok 9, Thailand.

Workshop on Methodology for Spectral Analyses of Soils, Warsaw, Poland (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.

Workshop on Soil Data Processing, France (ISSS Working Group D.P.).
Information: Dr. J. Schelling, Netherlands Soil Survey Institute, P.O. Box 98, Wageningen, The Netherlands.

News from the ISSS Secretariat and Treasury

It is regretted that the December 1978 issue of the Bulletin (no 54) has become available quite late. The delay was due in part to lengthy negotiations on favourable rates for printing and postage. The transfer of the Secretariat from Rome to Wageningen, and of the membership administration to Ghent, may have caused irregularities in the addressing system. Members and subscribers affected are requested to complete the form on 'change or correction of address' as appearing in the present issue. It is the intention to prepare an 'Addendum and Corrigendum' to the 1977 Membership List by the end of the present year. This will also contain an updated Directory of National Societies.

The ISSS Committee on Rules is working on a revision of the Rules in accordance with the results of recent voting by individual Members and by the Council of the Edmonton Congress. It also intends to formulate a set of By-laws of the Society. Suggestions from Members are very welcome with the Chairman (address below). The new Rules and the By-laws will be published and distributed by the Secretariat.

Nouvelles du Secrétariat et de la Trésaurié de l'AISS

Il est regrettable que le fascicule de Décembre 1978 (No. 54) du Bulletin n'a été disponible que tardivement. Ce délai était du en partie aux longues nègociations pour l'obtention de taux favorables d'impression et d'expéditions postales. Le transfert du secrétariat de Rome à Wageningen et de l'administration des membres à Gand peut avoir causé des irrégularités dans la liste des adresses. Les membres et les souscriptions qui ont été victime de ce contretemps sont priés de completer le formulaire 'changement ou correction d'adresse' publié dans le présent fascicule. Il est prévu de préparer, pour la fin de d'année en cours, un 'Addendum et Corrigendum' à la liste des membres de 1977, de même qu'une mise à jour des Bureaux des Sociétés Nationales.

Le Comité du règlement prépare actuellement une révision du texte conformément au vote récent des membres individuels et par le Conseil du Congrès d'Edmonton. Il envisage également de préparer un règlement d'ordre intérieur de l'Association. De suggestions adressées au Président seront le bienvenu (adresse ci-dessous). Les nouveaus règlements seront publiés et distribués en temps utile par le Secrétariat.

Mitteilungen des IBG-Sekretariats und der Kassenverwaltung

Das Dezemberheft 1978 der Mitteilungen ist leider erst ziemlich spät erschienen. Die Verzögerung war zum Teil durch lange Verhandlungen über günstige Druck- und Versandkosten verursacht. Ausserdem hat die Verlegung des Sekretariats von Rom nach Wageningen und die der Mitgliederverwaltung nach Gent möglicherweise Unregelmässigkeiten im Adressierbetrieb verursacht. Die betroffenen Mitglieder und Subskribenten werden gebeten den Vordruck 'Adressenberichtigung oder -änderung', der in diesem Heft erscheint, auszufüllen. Damit soll Ende dieses Jahres ein 'Addendum und Corrigendum' zur Mitgliederliste 1977 erarbeitet werden. Dieses wird auch ein auf den neuesten Stand gebrachtes Verzeichnis der Nationalen Gesellschaften enthalten.

Das IBG Satzungskomitee überarbeitet zur Zeit die Satzungen, in Übereinstimmung mit den Ergebnissen jüngster Anträge einzelner Mitglieder und vom Beirat des Edmonton-Kongresses. Es will auch Vereinsordnungen für die Gesellschaft formulieren. Anregungen der Mitglieder an den Vorsitzenden sind willkommen (Anschrift unten). Die neuen Satzungen und Vereinsordnungen werden durch das Sekretariat zur gegebenen Zeit veröffentlicht werden.

Chairman, ISSS Committee on Rules / Président, Comité du règlement de l'A.I.S.S. / Vorsitzender, IBG Satzungskomitee:

Dr. E.G. Hallsworth, Univ. of Sussex, Falmer, Brighton, Sussex BN1 9QH, England.

Financial Situation of ISSS

The Ad-Hoc Committee on Finances established by the ISSS Council during the Edmonton Congress, was composed of Prof. R. Tavernier (Chairman) and the members Dr. D. R. Bhumbla and Dr. E. G. Hallsworth.

The Committee reviewed the accounts of the ISSS for the periods 1 January 1974–31 December 1977 and 1 January 1978–31 December 1978 respectively, and found them in order. The following balance sheets apply.

The Ad-Hoc Committee on Finances finds that these accounts have been duly audited in accordance with the Rules, that they are in agreement with the books and give a true and fair view of the financial situation of the Society.

The Committee wishes to express its appreciation to Dr. Dudal for the sound management of the Society's resources and for the accurate keeping of its accounts.

Edmonton, Alberta, 22 June 1978/Rome, 29 March 1979
(signed) R. Tavernier

Situation Financière de l'AISS

Le Comité 'ad hoc' pour les finances, nommé par le Conseil de l'AISS pendant le Congrès d'Edmonton, était composé comme suit: Président Prof. R. Tavernier; membres: Dr. D. R. Bhumbla et Dr. E. G. Hallsworth.

Le Comité a vérifié le relevé des comptes de l'AISS respectivement pour les périodes du 1 janvier 1974 au 31 décembre 1977 et du 1 janvier 1978 au 31 décembre 1978, et a constaté qu'ils étaient conformes au règlement de l'AISS. Le relevé suivant résumé la situation.

Le Comité 'ad hoc' pour les finances constate que le relevé des comptes a été controlé conformément aux statuts, et qu'il est en concordance avec les livres des comptes et qu'il donne un image sinçère et véritable de la situation financière de l'Association.

Le Comité désire exprimer son appréciation au Dr. Dudal pour la saine gestion des ressources de l'Association et pour la tenue méticuleuse des livres.

Edmonton, Alberta, le 22 juin 1978/Rome, le 29 mars 1979
(signé) R. Tavernier

Finanzielle Situation der IBG

Das ad hoc Komitee für Finanzen, das während des Edmonton-Kongresses durch den Beirat aufgestellt wurde, bestand aus Prof. R. Tavernier (Vorsitzender) sowie den Mitgliedern Dr. D. R. Bhumbla und Dr. E. G. Hallsworth. Das Komitee überprüfte die Konten der IBG für die Zeiträume von 1. Januar 1974 bis zum 31. Dezember 1977 und vom 1. Januar 1978 bis zum 31. Dezember 1978 und fand sie in Ordnung. Nachfolgend die entsprechenden Bilanzen.

Das ad hoc Komitee für Finanzen erklärt, dass diese Konten entsprechend den Vorschriften ordnungsgemäss überprüft worden sind, dass sie mit den Büchern übereinstimmen und ein wahrheitsgemässes Bild der finanziellen Situation der Gesellschaft geben.

Das Komitee möchte Herrn Dr. Dudal für seine einwandfreie Verwaltung der Mittel der Gesellschaft und für die genaue Buchführung seine Anerkennung aussprechen.

Edmonton, Alberta, 22. Juni 1978/Rom, 29. März 1979
(gez.) R. Tavernier

Receipts and Payments Accounts
for the period 1 January 1974–31 December 1977
(Summary of audited accounts for 1974, 1975, 1976 and 1977)

Receipts	U.S. $	Payments	U.S. $
Balance brought forward on 1 January 1974:			
Cash in Bank	4,984.42	Secretarial assistance	6,171.25
Membership fees	48,982.57	Travel and representation	3,616.78
Subscriptions	940.24	Subventions and grants	13,201.76
Subventions and grants	23,618.77	Printing costs	30,883.32
Advertisement	3,519.60	Purchase of publications	6,080.73
Sale of publications and subscriptions to Soil Biology	7,874.26	Subscriptions to Soil Biology	1,531.80
Bank interests	2,486.64	Bank charges	147.47
Sale of equipment	823.72	Equipment and supplies	2,098.29
Sale of bonds	4,932.24	Postal charges	8,754.34
Unesco contract	1,000.00	Remote sensing seminar	2,135.64
Remote sensing seminar (fees)	1,810.09	Unesco contract	300.00
		Subcriptions reimbursed	4.00
			74,925.38
		Balance carried forward:	
		Cash in Bank	11,359.22
		Deposit and interest with FAO Credit Union	14,687.95
Total	100,972.55		100,972.55

Receipts and Payments Account
for the period 1 January–31 December 1978

Receipts	U.S. $	Payments	U.S. $
Balance brought forward on 1 January 1978:		Secretarial assistance	3,620.16
		Travel and representation	4,447.03
Cash in bank	11,359.22	Purchase of publications	929.72
Deposit with Credit Union	14,687.95	Bank charges	98.67
Membership fees	14,520.20	Unesco contract*	1,699.95
Subscriptions	232.51	Subventions	2,029.70
Advertisements	820.00	Equipment	74.58
Sale of publications	33.00	Remote Sensing Seminar**	2,000.00
Interests	1,319.76	Printing	9,467.06
Unesco contract*	1,500.00	Postal charges	999.61
Grants	1,461.92	Advances to new Treasury	8,240.38
		Balance carried forward	33606,86
		at 1 January 1979***	12,327.70
	45,934.56		45,934.56

* Receipts and payments covering a contract between Unesco and ISSS for a research review on Salt Affected Soils carried out and completed by Dr. I. Szabolcs on behalf of the Sub-Commission on Salt Affected Soils.

** Contribution of the ISSS to the printing of the Report of the ISSS Seminar on the Application of Remote Sensing to Soil Science (Commission V).

*** Amount transferred to Dr. D. Gabriels, Treasurer, ISSS, on 13 February 1979. (Interest accrued on the ISSS savings account during 1978, totalling U.S. $ 881,98, transferred on 18th May 1979)

Recettes et Depenses pour la période du 1 janvier 1974 au 31 décembre 1977

(Aperçu des comptes vérifiés par un expert-comptable pour 1974, 1975, 1976 et 1977)

Recettes	U.S. $	**Depenses**	U.S. $
Bilan au 1 janvier 1974			
Avoir en Banque	4.984,42	Aide au Secrétariat	6.171,25
Cotisations des membres	48.982,57	Représentation et déplacements	3.616,78
Souscriptions	940,24	Subventions et allocations	13.201,76
Subventions et allocations	23.618,77	Impression	30.883,32
Réclames	3.519,60	Achat de publications	6.080,73
Vente de publications et		Souscription à la	
souscriptions à la		Biologie du Sol	1.531,80
Biologie du Sol	7.874,26	Frais banquaires	147,47
Intérêts banquaires	2.486,64	Equipement et fournitures	2.098,29
Vente d'équipement	823,72	Frais postaux	8.754,34
Vente d'obligations	4.932,24	Séminaire de télédétection	2.135,64
Contrat Unesco	1.000,00	Contrat Unesco	300,00
Séminaire de télédétection	1.810,09	Remboursement de souscriptions	4,00
		Solde/créditeur:	74.925,38
		Avoir en Banque	11.359,22
		Dépôt et intérêts à la	
		FAO Crédit Union	14.687,95
Total	100.972,55		100.972,55

Relevé de Recettes et Depenses pour la période du 1 janvier au 31 décembre 1978

Recettes	U.S. $	**Dépenses**	U.S. $
Solde créditeur		Aide au Secrétariat	3.620,16
au janvier 1978:		Représentation et déplacements	4.447,03
Avoir en banque	11.359,22	Achat de publications	929,72
Dépôt 'Crédit Union'	14.687,95	Dépenses banquaires	98,67
Cotisations des membres	14.520,20	Contrat Unesco*	1.699,95
Souscriptions	232,51	Subventions	2.029,70
Réclames	820,00	Equipement	74,58
Vente de publications	33,00	Séminaire de Télédétection**	2.000,00
Intérêts	1.319,76	Impression	9.467,06
Contrat Unesco	1.500,00	Frais postaux	999,61
Allocations	1.461,92	Avances au nouveau trésorier	8.240,38
			33.606,86
		Solde au 1 janvier 1979***	12.327,70
	45.934,56		45.934,56

* Recettes et dépenses suite à un contrat entre l'Unesco et l'AISS pour effectuer une étude des recherches sur les sols salins effectuée par le Dr. I. Szabolcs pour la Sous- commission des Sols Salins.

** Contribution de l'AISS pour l'impression du rapport du séminaire de L'AISS sur les applications de la Télédétection à la Science du Sol.

*** Montant transferé au Dr. D. Gabriels, Trésorier de l'AISS, le 13 février 1979. (Intérêt cumulé du compte d'épargne de l'AISS durante 1978, comprenant U.S. $ 881,98, transferé le 18 mai 1979).

Einnahmen-Ausgaben Rechnung für den Zeitraum 1. Januar 1974–31. Dezember 1977

(Summe der geprüften Bilanzaufstellungen für 1974, 1975, 1976 und 1977)

Einnahmen	U.S. $	Ausgaben	U.S. $
Saldo per 1. Januar 1974:			
Bankguthaben	4.984,42	Aushilfe Sekretariat	6.171,25
Mitgliedsbeiträge	48.982,57	Reisen und Representation	3.616,78
Subskriptionen	940,24	Subventionen und Beihilfen	13.201,76
Subventionen und Spenden	23.618,77	Druckkosten	30.883,32
Anzeigen	3.519,60	Erwerb von Publikationen	6.080,73
Verkauf von Publikationen und Subskriptionen Soil Biology	7.874,26	Subskriptionen Soil Biology	1.531,80
Zinsen	2.486,64	Bankgebühren	147,47
Verkauf von Ausrüstung	823,72	Ausrüstung und Versorgungsgüter	2.098,29
Verkauf Obligationen	4.932,24	Postgebühren	8.754,34
UNESCO Vertrag	1.000,00	Seminar: Fernerkundung	2.135,64
Seminar; Fernerkundung (Beiträge)	1.810,09	Unesco Vertrag	300,00
		Subskriptionsrückerstattungen	4,00
			74.925,38
		Saldo:	
		Bankguthaben	11.359,22
		Anlage und Zinsen bei FAO Credit Union	14.687,95
	100.972,55		100.972,55

Einnahmen-Ausgaben Rechnung für den Zeitraum 1. Januar – 31. Dezember 1978

Einnahmen	U.S. $	Ausgaben	U.S. $
Saldo am 1 Januar 1978:		Aushilfe Sekretariat	3.620,16
Bankguthaben	11.359,22	Reisen und Representation	4.447,03
Anlage Credit Union	14.687,95	Erwerb von Publikationen	929,72
Mitgliedsbeiträge	14.520,20	Bankgebühren	98,67
Subskriptionen	232,51	Unesco Vertrag*	1.699,95
Anzeigen	820,00	Subventionen	2.029,70
Verkauf von Publikationen	33,00	Ausrüstung	74,58
Zinsen	1.319,76	Seminar Fernerkundung**	2.000,00
Unesco Vertrag*	1.500,00	Druckkosten	9.467,06
Spenden	1.461,92	Postgebühren	999,61
		Vorschusz zum neuem Schatzmeister	8.240,38
			33.606,86
		Saldo am 1. Januar 1979***	12.327,70
	45.934,56		45.934,56

* Einnahmen und Ausgaben im Rahmen eines Vertrages zwischen Unesco und IBG betreffend einen Sammelbericht über Salzböden, ausgeführt und abgeschlossen durch Dr. I. Szabolcs im Namen der Subkommission für Salzböden.

** Beiträge der IBG zum Druck des Berichtes vom IBG-Seminar über die Anwendung der Fernerkundung in der Bodenkunde (Kommission V).

*** Dieser Beitrag wurde am 13. Februar 1979 an Dr. D. Gabriels, Schatzmeister, IBG, übertragen. (Aufgelaufene Zinzen der IBG Spareinlage während 1978, insgesamt U.S. $ 881,98, übertragen am 18. Mai 1979).

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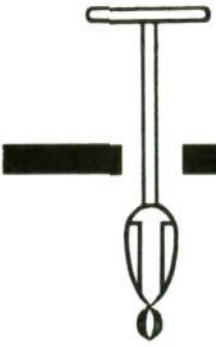

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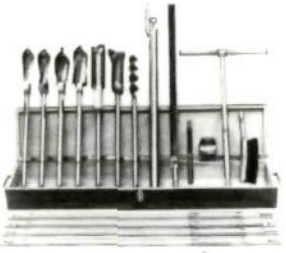

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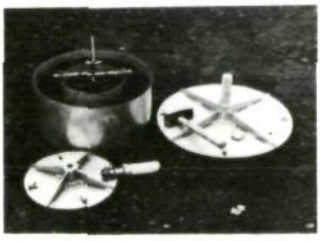

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Account: D. Gabriels, International Society of Soil Science, University Gent 390.0440957.50, Bank Brussel Lambert, Martelaarslaan, B-9000 Gent, Belgium.

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Compte: D. Gabriels, International Society of Soil Science, University Gent, 390.0440957.50, Bank Brussel Lambert, Martelaarslaan, B-9000 Gent, Belgique.

IBG-MITGLIEDSCHAFT

Die Internationale Bodenkundliche Gesellschaft heisst Personen und Institute, die auf dem Gebiet der Forschung und Anwendung der Bodenkunde arbeiten, als Mitglieder willkommen. Aufnahmeanträge können direkt an das Generalsekretariat der Gesellschaft geschickt oder über die nationalen bodenkundlichen Gesellschaften an dieses geleitet werden. Der Einzelmitgliedsbeitrag, der jeweils im Januar zu entrichten ist, beträgt jährlich 5 US-Dollar oder den Gegenwert in einer konvertierbaren Währung. Der jährliche Mitgliedsbeitrag für Institute beträgt 25 US-Dollar.

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