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Seat/Siège/Sitz: c/o Institut für Bodenforschung & Baugeologie, Universität für Bodenkultur, Gregor-Mendel-Strasse 33, A-1180 Vienna, Austria. Tel.: +43 222 3106026; Fax.: +43 222 3106027.

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Deputy Secretary-General/Secrétaire Général adjoint/stelvertretender Generalsekretär
Mr. J.H.V. van Baren, ISRIC, P.O.Box 353, 6700 AJ Wageningen, the Netherlands.
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Commissions/Commissions/Kommissionen – Chairmen/Présidents/Vorsitzenden

I. Soil Physics/Physique du Sol/Bodenphysik
Dr. G. Vachaud, Institut de Mécanique (IMG), B.P. 53 X, F-38041 Grenoble, France

II. Soil Chemistry/Chimie du Sol/Bodenchemie
Prof. Dr. R.S. Swift, Dept. of Soil Science, The Univ. of Reading, London Road, Reading, Berks RG1 5AQ, England.

III. Soil Biology/Biologie du Sol/Bodenbiologie
Prof. Dr. J.M. Lynch, AFRC/Inst. for Horticultural Research, Worthing Road, Littlehampton, West Sussex BN17 6LP, England

IV. Soil Fertility and Plant Nutrition/Fertilité du Sol et Nutrition des Plantes/Bodenfruchtbarkeit und Pflanzenernährung
Dr. C.J. Asher, University of Queensland, Dept. of Agriculture, St. Lucia, QLD 4067, Australia

V. Soil Genesis, Classification and Cartography/Genèse, Classification et Cartographie du Sol/Bodengenetik, Klassifikation und Kartographie
Dr. H. Eswaran, USDA Soil Conservation Service, P.O. Box 2890, Washington DC 20013, USA

VI. Soil Technology/Technologie du Sol/Bodentechnologie
Dr. G.S. Sekhon, Potash Res. Inst., Sector 19, Dundahera, Delhi-Gurgaon Rd. Furgaon, India

VII. Soil Mineralogy/Minéralogie du Sol/Bodenmineralogie
Prof.Dr. R.J. Gilkes, University of W.A., Dept. of Soil Science, Nedlands, WA 6009, Australia

Season's Greetings
Meilleurs Voeux
Beste Glückwünsche

The Officers of the International Society of Soil Science
Le Bureau de l'Association Internationale de la Science du Sol
Der Vorstand der Internationalen Bodenkundlichen Gesellschaft

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ISSS Subcommission on Salt-Affected Soils

All-Union Society of Soil Science USSR

Announcement

INTERNATIONAL SYMPOSIUM ON GENESIS AND CONTROL OF FERTILITY OF SALT-AFFECTED SOILS

Volgograd, USSR, September 9-15, 1991

The Symposium is organized by the ISSS Subcommission on Salt-Affected Soils in collaboration with the All-Union Society of Soil Science. Host will be the V.V. Dokuchaev Soil Science Institute, USSR.

Selected topics: 1) Genesis, diagnostics and investigation methods of saline and solonetz soils; 2) Utilization, reclamation and agrogenic evolution of saline and solonetz soils under different environmental conditions; 3) Control and prevention of the secondary salinization of irrigated soils.
Languages: English, Russian.
Accommodation: in hotel in Volgograd. Charges for single room between 50-70 US$.
Papers: Papers are invited on the above described selected topics. Manuscripts not exceeding 4 typed pages (single-space typing) in English should be submitted for publication before **March 31, 1991.**
Registration fee: (including symposium materials, proceedings, sight-seeing and field trip): 270 US$.
Excursion: Post-symposium field study tour of 6 days to Central Asia (Tashkent-Samarkand-Bukhara, oasis irrigation) will be organized. The price will be approximately 600 US$.
Information: For further information related to registration, details of the programme, costs and accommodation, please contact: Dr.sc. B.A. Simovets, Dokuchaev Soil Science Institute, Pygevsky per.7, 109017 Moscow, USSR.

NOTICE OF INTENT

International Symposium on Genesis and Control of Fertility
of Salt-Affected Soils
9-15 September 1991

Name: .....
Organization: .....
Mailing address: .....
.....
Country .....
Telephone ..... Fax ..... Telex .....
Proposed title of paper for presentation: .....
.....
Date: ..... Signature: .....

14TH CONGRESS/14E CONGRES/14. KONGREß
FINAL REPORT OF THE ORGANIZING COMMITTEE
COMPTE-RENDU DU COMITÉ D'ORGANISATION
ABSCHLUSSBERICHT DER ORGANISATIONSKOMITEES

The **14th International Congress of Soil Science** was held at the Kyoto International Conference Hall, August 12-18, 1990. The registered number of participants amounted to 1616, coming from 75 countries. (Europe: 20%, North America: 10%, Latin America: 3%, Asia except Japan: 17%, Africa: 2%, Australia/New Zealand: 3%, Japan: 45%).

During the Congress, under the Motto 'Improving Soil Management for Man and the Environment – Optimum Utilization of the World's Soils Resources to Increase Biological Production and to Protect the Environment', 6 plenary lectures, 45 symposia with 281 speakers, and 561 poster presentations were offered.

The Trans-Siberia tour, 5 Japan Inland tours and 4 China tours were successfully carried out as pre- and post-congress tours.

The Congress papers in the form of Transactions in 8 volumes were given to the participants upon registration. Volume 0 contains the full text of the papers presented in the plenary sessions as well as an author index of all volumes; volume I-VII give the full text of the symposium sessions as well as the extended summaries of the poster sessions which were categorized in the corresponding Commissions.

A limited number of the above volumes is available; information can be obtained from the Organizing Committee or from the Office of the Secretary General of ISSS.

Symposia of the Tropical Agriculture Research Center, Japan, and the Potash and Phosphate Institute of Canada were held as satellite symposia.

In the exhibition hall national and international societies and institutions presented themselves. Also soil maps, soil monoliths etc. were shown.

Furthermore, the Organizing Committee acted upon a plan to introduce Japanese agriculture in detail by collecting and arranging the results from every prefectural agricultural experiment station of Japan. The Congress participants were shown which strategy is followed in developing and allocating soil resources for agricultural use in Japan. Japanese agriculture, which is one of the most intensive agricultural systems in the world, is faced with problems how to survive under the pressure of abundant imported agricultural products.

The Organizing Committee wishes to express its appreciation to the Secretary General, Dr. W. Sombroek, to the Deputy Secretary-General, Dr. I. Szabolcs, to the Treasurer, Dr. D. Gabriels, as well as to the former officers of the Commissions for their help and cooperation. Through their participation in drawing up the program and especially for choosing the plenary speakers and symposia conveners, they have contributed considerably to the success of the Congress.

Many thanks should also be extended to all co-workers and assistants of the special committees of the Organizing Committee, individual contributors and donors. Without their constant dedication and support, the Congress would not have succeeded.

For the Organizing Committee,
the Chairman: Kikuo Kumazawa.

Le **14e Congrès International de la Science du Sol** s'est tenu à Kyoto, au Centre International des Congrès, du 12 au 18 août 1990. Le nombre de participants inscrits s'élevait à 1616, venant de 75 pays. (Europe: 20%, Amérique du Nord: 10%, Amérique Latine: 3%, Asie, excepté le Japon: 17%, Afrique: 2%, Australie/Nouvelle Zélande: 3%, Japon: 45%).

Au cours du Congrès, dont la devise était 'Amélioration de la Gestion des Sols pour l'Homme et l'Environnement – Utilisation Optimale des Ressources en Sol du Monde pour augmenter la Production Biologique et pour protéger l'Environnement', 6 communications plénières ont été proposées, ainsi que 45 symposiums (281 orateurs), et 561 posters ont été présentés.

L'excursion Trans-Sibérienne, les 5 excursions au Japon et les 4 excursions à travers la Chine se sont déroulées d'une excellente façon.

Les transactions du Congrès, en 8 volumes, ont été distribuées aux participants lors de leur inscription. Le Volume 0 contient le texte intégral des communications présentées au cours des sessions plénières, ainsi qu'un index des auteurs des communications incluses dans chacun des volumes; les volumes I-VII donnent les textes intégraux des communications présent«es au cours des symposiums ainsi que les résumés des posters, classés par Commissions de l'AISS (I à VII).

Ces volumes ne sont disponibles qu'en nombre limité; des renseignements à ce sujet peuvent être obtenus auprès du Comité d'Organisation ou au bureau du Secrétaire Général de l'AISS.

Des symposiums 'satellites' ont été tenus par le Centre de Recherche pour l'Agriculture Tropicale, du Japon, et l'Institut pour la Potasse et le Phosphate, du Canada.

Dans le hall d'exposition, les associations et institutions nationales et internationales se sont présentées. Des cartes géologiques, des monolithes etc. ont également été exposés.

Par ailleurs, le Comité d'Organisation a présenté en détail l'agriculture japonaise en rassemblant et en groupant les résultats des stations expérimentales agricoles de chacune des préfectures du Japon. Les participants du Congrès ont pu prendre connaissance de la stratégie japonaise pour le développement et l'attribution des ressources en sol pour l'utilisation agricole. L'agriculture japonaise, qui est l'une des plus intensives au monde, est confrontée à des problèmes de survie, sous la pression de l'importation d'une énorme quantité de produits agricoles.

Le Comité d'Organisation manifeste sa reconnaissance au Secrétaire Général, Dr. W. Sombroek, au Secrétaire Général Adjoint, Dr. I. Szabolcs, au Trésorier, Dr. D. Gabriels, ainsi qu'aux membres sortants du bureau des Commissions pour leur aide et leur coopération. Grâce à leur participation pour la définition du programme et principalement pour le choix des orateurs des séances plénières et des organisateurs des symposiums, ils ont contribué de façon considérable au succès du Congrès.

Nous adressons également nos remerciements à tous ceux qui ont participé aux comités spéciaux du Comité d'Organisation, aux collaborateurs individuels et aux donateurs. Le Congrès a pu être couronné de succès entre autre grâce à leur dévouement et leur aide.

Pour le Comité d'Organisation,
son Président — Kikuo Kumazawa

Der 14. **Internationale Bodenkundekongreß** wurde vom 12.-18. August 1990 im Internationalen Kongreß-Zentrum in Kyoto abgehalten. Dabei waren 1616 Teilnehmer aus 75 Ländern registriert (Europa: 20%, Nordamerica: 10%, Lateinamerica: 3%, Asien, ausgenommen Japan: 17%, Afrika: 2%, Australien/Neuseeland: 3%, Japan: 45%).

Während des Kongresses unter dem Motto 'Verbesserung der Bodenbewirtschaftung für Mensch und Umwelt – optimale Nutzung der Bodenressourcen der Welt zwecks Steigerung der biologischen Produktion und zum Schutz der Umwelt' wurden 6 Plenarvorträge, 45 Symposien mit 281 Vortragenden sowie 561 Posterpräsentationen dargeboten.

Außerdem wurden vor bzw. vor dem Kongreß eine Trans-Sibirien-Exkursion, und fünf Exkursionen in Japan, und nach dem Kongreß vier Exkursionen in China erfolgreich durchgeführt.

Bei der Anmeldung wurden den Teilnehmern die Kongreßberichte in 8 Bänden übermittelt. Band 0 enthält die gesamten Texte der Plenarsitzungen sowie ein Verzeichnis der Autoren aller Bände; die Bände I-VII enthalten die gesamten Texte der Symposien sowie ausführliche Zusammenfassungen der Posterpräsentationen, die nach den entsprechenden Kommissionen unterteilt wurden.

Eine begrenzte Anzahl der genannten Publikationen ist noch erhältlich. Diesbezügliche Informationen können vom Organisationskomitee oder vom Büro des Generalsekretärs der ISSS eingeholt werden.

Symposien des Tropischen Landwirtschaftlichen Forschungszentrums von Japan und des Kali- und Phosphor-Institutes von Kanada wurden als Satellitenveranstaltungen abgehalten.

Nationale und internationale Gesellschaften und Institutionen präsentierten sich in der Ausstellungshalle. Ebenso wurden Bodenkarten, Bodenmonolithe usw. gezeigt.

Darüber hinaus zeigte das Organisationskomitee die japanische Landwirtschaft in detaillierter Weise durch Sammlung und Ausstellung von Einzelergebnissen aller regionalen landwirtschaftlichen Untersuchungs- und Forschungsanstalten. Den Kongreßteilnehmern wurde hiermit aufgezeigt, welche Strategien bei der Erforschung und Bereitstellung von Bodenressourcen im Rahmen der landwirtschaftlichen Nutzung in Japan verfolgt werden. Die japanische Landwirtschaft, die eine der intensivsten landwirschaftlichen Systeme der Welt darstellt, sieht sich mit dem Problem konfrontiert, unter dem Druck von zahlreichen importierten landwirtschaftlichen Produkten zu überleben.

Das Organisationskomitee möchte seinen besonderen Dank dem Generalsekretär, Dr. W. Sombroek, dem stellvertretenden Generalsekretär, Dr. I. Szabolcs, dem Schatzmeister, Dr. D. Gabriels sowie den früheren Vorstandsmigliedern der Kommissionen für ihre Hilfe und Zusammenarbeit ausdrücken. Durch ihre Mitarbeit an der Programmgestaltung und insbesondere an der Auswahl der Vortragenden für die Plenarveranstaltungen sowie der Leiter von Symposien haben Sie wesentlich zum Erfolg des Kongresses beigetragen.

Ebenso sei allen Mitarbeitern und Helfern der Spezialkomitees des Organisationskomitees sowie weiteren Helfern und Spendern aufrichtig gedankt. Ohne deren ständigen Einsatz und Unterstützung wäre ein Gelingen des Kongresses nicht möglich gewesen.

Für das Organisationskomitee,
der Vorsitzende: Kikuo Kumazawa

REPORT OF THE KYOTO COUNCIL

4 sessions, on the average 50 participants with voting rights

1. Venue of the next Congress

Acapulco-Mexico, July/August 1994, with excursions in Venezuela and USA.

2. New President & Vice-President

Dr. Andrèz Aguilar
Dr. Roberto Nuñes

3. Other Bureau officers

New Secretary-General:	Prof. Winfried Blum, Vienna, Austria
New Deputy Secretary-General:	Mr. Hans van Baren, Wageningen, the Netherlands.
New Treasurer:	No definite candidate yet for the post of Treasurer, though likely to be a Swiss Soil Scientist, already approved in principle by Council. Dr. Gabriels is found prepared to continue for one or two financial years; moment of succession is to be decided by the Executive Committee.

4. New Commission Chairmen and Vice Chairmen

(3rd Vice-Chairmen and Secretary to be indicated by Mexican Society); results of elections here, duly certified and found geographically in order with bylaws (one minor shift). See list A.

5. Composition of Subcommissions

Most officers were elected at their own inter-Congress meeting, except those of Subcommission C, who were elected at this Congress. See list B.

6. Working Groups

AS (Acid Sulphate Soils), to continue, with Dr. Syaka Sadio (Senegal) as new Chairman.
CO (Soil Colloid Surfaces): terminated.
DC (Desertification Control): terminated.
DM (World Soils and Terrain Digital Database: SOTER): to continue, with Prof. Baumgardner (USA) continuing as Chairman.
FS (Forest-Soils Relationships): to continue, with Dr. P.K. Khanna (Australia) continuing as Chairman. Request for upgrading to Subcommission postponed till next Congress; subject widened to Soils, Forests and (Agro)Forestry.
FT (Long Term Soil Fertility rials): to continue and to operate worldwide instead of only European.
HP (History, Philosophy and Sociology of Soil Science): to continue, with Prof. Yaalon (Israel) continuing as Chairman. Request for upgrading to Subcommission postponed.

LI (Land Evaluation Information Systems): to continue, with Dr. Dumanski (Canada) continuing as Chairman.
MV (Soil & Moisture Variability in Time & Space): to continue, with Prof. Bouma (the Netherlands) to continue as Chairman.
PM (Pedometrics): formalized as Working Group, with Prof. Myers (USA) as Chairman.
PP (Paleopedology): to continue, with Dr. Catt (UK) to continue as Chairman.
PS (Paddy Soils Fertility): to continue, with Prof. Zhu-Zhaoliang (China) to continue as Chairman.
RS (Remote Sensing for Soil Science): to continue, with Dr. Karale (India) as new Chairman.
RZ (Rhizosphere): to continue, with Prof. Jungk (Germany) to continue as Chairman.
SG (Soils and Geomedicine): to continue, with Prof. Låg (Norway) to continue as Chairman.
SP (Soils and Groundwater Pollution): formalized as Working Group, with Dr. Wieringa (USA) as new Chairman.

A new Working Group was established on '*Interactions of Soil Minerals with Organic Components and Micro Organisms*' with Prof. Huang (Canada) as Chairman.
A proposal for a Working Group on 'Earthworm Ecology' was not accepted, considering that it belongs to the core task of Subcommission D.
A proposal for a Working Group on 'Soil Horizons' was held in obeisance until the Acapulco Congress, where a special symposium on the subject is suggested.
A proposal for a Working Group on 'Plant Nutrition in relation to Crop Production' was considered, but a decision deferred to the Executive Committee mid-term meeting in 1992.

7. Standing Committees

The standing committee on *Standardisation*, to liaise with ISO will continue under the present Chairman Prof. Blume (Germany). Some vacancies of commission delegates will be filled soonest in view of the importance of the matter.
The standing committee on *International Programmes* is continuing with Prof. Scharpenseel (Germany) to continue as Chairman. Additional membership with one representative of the three regional Societies (Latin America, Africa, East Asia/Southeast Asia) and of course the new Secretary-General.
A new standing committee was established on *Education in Soil Science* (with particular attention to secondary school/college level) at the suggestion of Prof. Ruellan (France) who will chair the Committee. Membership from all (sub)commissions with due regard to geographic and language differentiation.
A new standing committee was established on *Budget and Finance* (instead of ad-hoc committees at Congresses) with Dr. Gardner (USA) as Chairman, and the outgoing Secretary-General and Treasurer as ex-officio members, and 3 representatives of regional Societies (the latter mainly by correspondence, in view of financial limitations).
The standing committee on *Structure and Statutes* will have a new Chairman and three new members replacing Drs. Dudal, Tavernier and Garbouchev. The new Chairman is Dr. Tinker (UK), the new members are: Prof. Hartge, Dr. Kyuma/Glinski, Prof. Rozanov. The suggestions of this Committee for a basic restructuring of the Society (see Bulletin 77) were discussed amply, but no consensus was reached.

In the forthcoming 4 years, the item will be discussed further in the Bulletin and the national/regional societies, and a decision may be reached in-principle at the Acapulco Council – upon which postal voting by all members will be required.

Hence forward, Working Groups will report directly to the Secretary-General, not anymore to any single Commission, in view of the intended interdisciplinary character of their subject. The same applies to the four existing Subcommissions (interdisciplinary subject of more permanent nature).

Ultimately there should be Divisions instead of basic-discipline Commissions (cf. ICSU unions) and Subcommissions as Interdisciplinary Commissions. For the time being no new Subcommissions.

8. Report of the Secretary-General over the past four years

Accepted.
Two new scientific journals as Cooperating Journals:
- Arid Soil Research and Rehabilitation (Taylor & Francis Co.)
- Soil Technology (Catena)

possibly Soil Tillage Research (Elsevier)

9. Report of the Treasurer and of ad-hoc Committee on Finance

In order and accepted.

Per financial year 1991:
- Membership fees raised to $ 12.–
- Corporate member fees (libraries): $ 50.–
- Life membership: $ 300.– (7 new lifemembers at this Congress!)

Fellowship Fund: too cumbersome; restricted to Congress and official inter-Congress subcommission meetings.

The Council approved that the Secretary-General seeks admittance of ISSS as Regular Member rather than Scientific Associate of ICSU, in view of the strongly increased activity of that grouping of the natural sciences (e.g. the 'Global Change' programme). Formal approval by Council only at Acapulco Congress, after due consideration of written conditions (advantages and disadvantages).

Approved Inter-Congress meetings

See list C

New Honorary Members

Out of 8 nominations, the Council elected 6 new Honorary members. Names to be announced by the President.

LIST A **ISSS COMMISSIONS OFFICERS, 1990-1994**

	I Soil Physics	II Soil Chemistry	III Soil Biology	VI Soil Fertility	V Soil Genesis etc.	VI Soil Technology	VII Soil Mineralogy
Chairman	G. Vachaud (France)	R.S. Swift (UK)	J.M. Lynch (UK)	C.J. Asher (Australia)	H. Eswaran (USA)	G.S. Sekhon (India)	R.J. Gilkes (Australia)
Past Chairman	M. Kutilek (Czechoslovakia)	G.H. Bolt (Netherlands)	J.C.G. Ottow (Germany)	N.N. Goswami (India)	A. Ruellan (France)	I.P. Abrol (India)	A. Herbillon (France)
1st Vice Chairman	S. Iwata (Japan)	N. Senesi (Italy)	J.M. Tiedje (USA)	H. Hirata (Japan)	H.P. Blume (Germany)	R.C. Dalal (Australia)	Ms. C.G. Olson (USA)
2nd Vice Chairman	D.E. Rolston (USA)	W.H. van Riemsdijk (Netherlands)	J.A. van Veen (Netherlands)	P.K. Khanna (India)	V.O. Targulian (USSR)	N. Ahmad (Trinidad & T.)	K. Stahr (FRG)
3rd Vice Chairman	L. Rendon Pimentel (Mexico)	L.J. Cajuste (Mexico)	R. Ferrera-Cerrato (Mexico)	A. Turrent Fernandez (Mexico)	H. Cuanalo de la Cerda (Mexico)	R. Fernandez Gonzalez (Mexico)	M.C.N. Aguilera Herrera (Mexico)

Note: The names of the Mexican Secretaries of the Commissions are not all known at the time of publishing. They will appear in the next issue of the Bulletin.

LIST B **ISSS SUBCOMMISSIONS OFFICERS 1990-1994**

	A Salt-affected Soils	B Soil Micromorphology	C Soil Conservation & Environment	D Soil Zoology
Chairman	Zhao Qiguo (China)	L.P. Wilding (USA)	I. Pla-Sentis (Venezuela)	M.B. Bouché (France)
1st Vice Chairman	Mrs. M. Redly (Hungary)	P. Goldberg (Israel)	C. Valentin (France)	H. Watanabe (Japan)
2nd Vice Chairman	J. Breburda (Germany)	C.J. Chartres (Australia)	B.A. Stewart (USA)	V. Huhtá (Finland)
3rd Vice Chairman	M. Ortega Escobar (Mexico)	Mrs. K. Oleschko (Mexico)	M. Anaya Garduño (Mexico)	Mrs. I. Barois (Mexico)
Secretary	I.N. Lyubimova (USSR)	Mrs. M.J. Kooistra (Netherlands)	an Australian	J.C. Kühle (Germany)

LIST C APPROVED INTER-CONGRESS MEETINGS 1990-1994

1991

International Symposium on *Soil Crusting: physical and chemical processes*, Athens-Georgia, USA, 30 May-1 June 1991 (US Society).

Symposium on *Paleopedological Research* during the VIII INQUA Congress, Beijing, China, 2-9 August 1991 (Working Group PP).

Regional Conference on the *Ecological Management of the Danube Delta*, Bucharest, Rumania, September 1991 (Romanian Society).

International Symposium on *Genesis and Control of Fertility of Salt-Affected Soils*, Volgograd, USSR, September 1991. (Subcommission A, USSR Society and Dokuchaev Institute).

International Workshop on *Land Information Systems for Sustainable Agriculture*, Buenos Aires, Argentina, 11-12 November 1991 (Working Group/LI and Argentinean Society).

International Workshop on *Methods of Research on Soil Structure/Soil Biota Interrelationships*, Wageningen, the Netherlands. 25-28 November 1991 (Subcommissions B and D and Dutch Society).

1992

International Conference on *Strategies for Utilizing Salt-Affected Soils*, Bangkok, Thailand, February 17-25, 1992 (Subcommission A, Thailand Society and LDD).

International Conference on *Management, Improvement and Evaluation of Acid Sulphate Lands*, HoChi Minh City, Vietnam, February 1992 (Working Group/AS and Vietnam Society).

International Conference on *Improving Soil Management for Intensive Cropping in Tropics and Subtropics*, Dhaka, Bangladesh, February/March 1992. (Commission IV and Bangladesh Society).

Second International Symposium on *Soil under Forest*, Puerto Ayacucho, Venezuela. March/April 1992 (Working Group FS and Venezuelan Society).

International Workshop on *Strength and Stress Distribution in Structured Unsaturated Soils*, Kiel, Germany May 1992. (Commission I and German Society).

International Working Meeting on *Soil Micromorphology*, Townsville, Australia, July 12-18 1992. (Subcommission B and Australian Society).

International Symposium on the *Impact of Interactions of Soil Minerals. Natural Organics and Microbes on Environmental Quality*, Banff, Canada, July 1992. (Working Group/MO, Canadian Society and IUPAC)

11th International Colloquium on *Soil Zoology*, Jyvanskyla, Finland. August 1992. (Working Group/SP and Subcommission D, with IUBS, and Finnish Society).

International Conference on *Classification and Management of Texturally Strongly Differentiated Soils of the (Northern) Pacific Region*, Khabarovsk, USSR, September 1992. (Commission V and USSR Society).

European Conference on *Integrated Research* for Soil and Sediment Protection Maastricht, the Netherlands, 6-12 September 1992. (Dutch Society, with several (Sub)Commissions).

International Workshop on the *Measurement and Prediction of Soil Moisture Variability*, Cornell, USA, mid 1992. (Commission I, Working Groups MV and SP, with US Society).

Seventh International *Soil Conservation* Conference (ISCO), New South Wales, Australia, September 1992. (Subcommission C).

Conference on *Resilience of Soils, and Sustainable Land Use*, Budapest, Hungary, September 1992. (Commission VI, Hungarian Academy of Sciences Society, CABI).

International Conference on *Application of Geostatistics in Soil Science*, Wageningen, the Netherlands, September 1992. (Working Group PM and Dutch Society).

International Symposium on *Nutrient Cycling and Fertilizer Management in Sustainable Rice Based Cropping Systems*, Nanjing, China, October 1992. (Working Group PS, with Chinese Society).

International Seminar on *Managing Red and Lateritic Soils for Sustainable Agriculture*, Bangalore, India, November 1992. (Commissions IV, V and VI, and Indian Society).

First *Central and East European Conference on Physics of Soil Water*, Budapest Hungary, 1992. (Hungarian Society and Commission I).

International Conference on *Cryopedology*, Pushino, USSR, 1992. (Commission V and USSR Society).

1993

Joint meeting *Commission VII (ISSS) – International Association for the study of clay (AIPEA)*, Adelaide, Australia, July 18-25, 1993. For further information R.W. Fitzpatrick, CSIRO Private Bag No 2, Glen Osmond S.A., Australia 5064.

International Workshop on *Classification and Management of Desert Soils*, Nanjing, China, 19 August-2 September 1993. (Commission V, VII and II, with Chinese Society).

Symposium on *The Root-Soil Interface in relation to Plant Nutrition*, Perth, Australia, September 1993. (Working Group RZ, at International Colloquium of Plant Nutrition).

International Conference on *Agriculture in Transition: an International Framework for Sustainable Land Management*, Canada, 1993. (Working Group LI, and Canadian Society).

International Conference on *Diagnosis and Improvement of Saline and Alkali Soils*, Riverside, USA, 1993. (Subcommission A and US Society, at 40th Anniversary USDA Handbook 60).

International Conference on *Andisols and other Mountain Soils*, Quito, Ecuador, 1993. (Commission V with Ecuadorian Society).

International Conference on the *Structure of the Soil Cover*, Pushino, USSR, 1993. (Commission V and USSR Society).

Most of the participants of the ISSS Kyoto Council sessions, on the steps of the KICH conference centre. (Front row 5th from right, the new President Dr. A. Aguilar, and second from the left the new Secretary-General, Prof. W. Blum).

ADDRESSES OF THE NEW ISSS OFFICERS

(for the names and addresses of the immediate past-Chairmen, see covers of Bulletin 77, for functions see list A in report of the Council, p, 10).

Commissions

Commission I:

Dr. G. Vachaud, Institut de Mécanique (IMG), B.P. 53 X, F-38041 Grenoble, France
Dr. S. Iwata, Ibaraki University, Faculty of Agriculture, Ami-Machi, Inashiki, Ibaraki 305, Japan
Dr. D.E. Rolston, University of California, Dept. of L.A.W.R., Davis, CA 95616, USA.
Dr. L. Rendon Pimentel, Colegio de Postgraduados, Centro de Hidrociencias, 56230 Chapingo, Mex., Mexico.

Commission II:

Prof. Dr. R.S. Swift, Dept. of Soil Science, The Univ. of Reading, London Road, Reading, Berks RG1 5AQ, England
Prof. N. Senesi, Istituto Chimica Agraria, Via Amendola 165/A, I-70100 Bari, Italy
Prof. W.H. van Riemsdijk, Dept. of Soil Science and Plant Nutrition, Agric. Univ., P.O.Box 8005, 6700 EC Wageningen, The Netherlands
Dr. L.J. Cajuste, Colegio de Postgraduados, Centro de Edafología, 56230 Chapingo, Mex., Mexico.

Commission III:

Prof. Dr. J.M. Lynch, AFRC/Inst. for Horticultural Research, Worthing Road, Littlehampton, West Sussex BN17 6LP, England
Dr. J.M. Tiedje, Michigan State University, Dept. of Crop & Soil Science, East Lansing MI 48824, USA
Dr. J.A. van Veen, Inst. for Soil Fertility Research, P.O.Box 48, 6700 AA Wageningen, The Netherlands
Dr. R. Ferrera-Cerrato, Colegio de Postgraduados, Centro de Edafología, 56230 Chapingo, Mex., Mexico.

Commission IV:

Dr. C.J. Asher, University of Queensland, Dept. of Agriculture, St. Lucia, QLD 4067, Australia
Dr. H. Hirata, Tokyo University Agr.Techn., 3-5-B Saiwai-cho, Fuchui, Tokyo 183, Japan
Dr. P.K. Khanna, CSIRO Division of Forestry & Forest Products, P.O.Box 4008, Canberra ACT 2600, Australia
Dr. A. Turrent Fernandez, Colegio de Postgraduados, Centro de Edafología, 56230 Chapingo, Mex., Mexico.

Commission V:

Dr. H. Eswaran, USDA Soil Conservation Service, P.O. Box 2890, Washington DC 20013, USA
Prof.Dr. H.-P. Blume, Inst. für Pflanzenernährung & Bodenkunde, Olshausenstr. 40-60, HS 20A, D-2300 Kiel 1, Germany
Prof.Dr. V.O. Targulian, Inst. Geography/Soil Geography, 29 Staromonetny Lane, 109017 Moscow, USSR
Dr. H. Cuanalo de la Cerda, Colegio de Postgraduados, Centro de Edafología, 56230 Chapingo, Mex., Mexico.

Commission VI:

Dr. G.S. Sekhon, Potash, Res. Inst., Sector 19, Dundahera, Delhi-Gurgaon Rd. Furgaon, India

Dr. R.C. Dalal, Queensland Wheat Research Inst., 13 Holberton Street, Toowoomba, QLD 4350, Australia

Prof. N. Ahmad, Univ. of the West Indies, Fac. of Agriculture, St. Augustine, Trinidad & Tobago

Dr. R. Fernandez Gonzalez, Colegio de Postgraduados, Centro de Edafología, 56230 Chapingo, Mex., Mexico.

Commission VII:

Prof.Dr. R.J. Gilkes, University of W.A., Dept. of Soil Science, Nedlands, WA 6009, Australia

Ms.Dr. C.G. Olson, USDA Soil Conservation Service, 100 Centennial Mall North, Lincoln NE 68508-3866, USA

Prof.Dr. K. Stahr, Univ. Hohenheim/Bodenkunde, Emil-Wolff-Str. 27, D-7000 Stuttgart 70, Germany

M.C.N. Aguilera Herrera, Instituto de Geología, Departamento de Edafología, UNAM, Ciudad Universitaria, 04515, México D.F., Mexico

Subcommissions

Subcommission A:

Prof. Zhao Qiguo, Nanjing Inst. of Soil Science, Academia Sinica, Nanjing, P.R. of China

Mrs.Dr. M. Redly, Res.Inst. Soil Science & Agricultural Chemistry, Herman Otto ut 15, 1022 Budapest, Hungary

Prof.Dr. J. Breburda, Justus Liebig Univ., Otto Nehagel Str. 10/D, 6300 Giessen, Germany

Dr. M. Ortega Escobar, Colegio de Postgraduados, Centro de Hidrociencias, 56230 Chapingo, Mex., Mexico.

I.N. Lyubimova, USSR

Subcommission B:

Dr. L.P. Wilding, Dept. of Soil & Crop Science, Texas A&M Univ., College Station TX 77843, USA

Dr. P. Goldberg, Hebrew Univ., Inst. of Archeology, Jerusalem 91-905, Israel

Dr. C.J. Chartres, CSIRO, Div. of Soils, P.O.Box 639, Canberra City, ACT 2601, Australia

Dra. K. Oleschko, Colegio de Postgraduados, Centro de Edafología, 56230 Chapingo, Mex., Mexico.

Mrs.Dr. M.J. Kooistra, Winand Staring Centre, P.O. Box 125, 6700 AC Wageningen, The Netherlands

Subcommission C:

Prof. I. Pla-Sentis, Las Acacias, Apartado 1131, Maracay, Venezuela

Dr. C. Valentin, ORSTOM, 70-74 Route d'Aulnay, F-93140 Bondy, France

Dr. B.A. Stewart, USDA-SEA-AR/Cons. & Prod. Research, P.O.Drawer 10, Bushland TX 79012, USA

Dr. M. Anaya Garduño, Colegio de Postgraduados, Centro de Edafología, 56230 Chapingo, Mex., Mexico.

Subcommission D:

Dr. M.B. Bouché, CEPE-CNRS, B.P. 5051, F-34033 Montpellier, France

Dr. H. Watanabé, Nishi 2-123, Edogawadai, Nagareyama-shi, Chiba 270-01, Japan

Prof.Dr. V. Huhtá, Univ. of Jyväskylä, Biol.I., Vapaudenkatu 4, SF-40100 Jyväskylä 10, Finland

Dra. I. Barois, Instituto de Ecología, Apartado Postal 63, 91000 Xalapa, Veracruz, Mexico.

J.C. Kühle, Germany

Working Groups

Working Group AS:
Dr. S. Sadio, ISRA/ORSTOM, B.P. 1386, Dakar, Senegal

Working Group DM:
Dr. M.F. Baumgardner, Dept. of Agronomy, Purdue Univ., West-Lafayette, IN 47907, USA

Working Group FS:
Dr. P.K. Khanna, CSIRO, Div. of Forest Research, P.O. Box 4008, Queen Victoria Terrace ACT 2600, Australia

Working Group FT:
Dr. S.K. De Datta, IRRI, P.O.Box 933, Manila, Philippines

Working Group HP:
Prof.Dr. D.H. Yaalon, Dept. of Geology, Hebrew Univ., Jerusalem 91000, Israel

Working Group LI:
Dr. J. Dumanski, Land Resources Research Institute, Agric. Canada, Ottawa, Ontario, Canada K1A 0C6

Working Group MO:
Prof. P.M. Huang, Univ. of Saskatchewan, Dept. of Soil Science, Saskatoon, Sask., Canada S7N 0W0

Working Group MV:
Dr. J. Bouma, Dept. of Soil Science, Agric. University, P.O. Box 37, 6700 AA Wageningen, The Netherlands

Working Group PM:
Prof. Dr. D.E. Myers, Dept. of Mathematics, Univ. of Arizona, Tucson AZ 85721, USA

Working Group PP:
Dr. J.A. Catt, Rothamsted Exp. Station, Soils & Plant Nutr.Dept., Harpenden, Herts. Al5 2JQ, England

Working Group PS:
Dr. Zhu-Zhaoliang, Inst. of Soil Science, Academia Sinica, Nanjing, China

Working Group RS:
Dr. R.L. Karale, Remote Sensing Service Centre, NBSS & LUP Campus, Amravati Road, Nagpur 440010, India

Working Group RZ:
Prof.Dr. A. Jungk, Inst. f. Agrikulturchemie, Von Sieboldstrasse 6, D-3400 Göttingen, Germany

Working Group SG:
Prof. J. Låg, Dept. of Soil Science-AUN, P.O. Box 27, 1432 Ås-NLH, Norway

Working Group SP:
Dr. P.J. Wieringa, Univ. of Arizona, Soil & Water Science, Tucson AZ 85721, USA

ISSS Committees and Representatives

Committee on Statute and Structure (CSS), to ensure correct application of Statutes and Bylaws of ISSS, and to propose changes in the organizational structure as required.
Chairman: Prof.Dr. P.B. Tinker, NERC, Polaris House, North Star Avenue, Swindon SN2 1EU, England.
Members: Prof. Dr. R. Dudal (Belgium); Dr. S. El-Swaify (USA-Hawaii), Prof.Dr. I.P. Garbouchev (Bulgaria), Dr. N.N. Goswami (India), Dr. F.N. Muchena (Kenya); Prof.Eng. I. Pla-Sentis (Venezuela), Dr. W.G. Sombroek (The Netherlands), Prof.Dr. R. Tavernier (Belgium), Dr. P.B. Tinker (UK), and Dr. G. Varallyay (Hungary).

Committee on International Programmes (CIP), to liaise with international organizations and to promote joint programmes.
Chairman: Prof.Dr. H.W. Scharpenseel, c/o Institut f. Bodenkunde, Univ. Hamburg, Allende-Platz 2, D-2000 Hamburg 13, Germany.
Members: Dr. I.P. Abrol (India), Dr. R.W. Arnold (USA), Dr. D.J. Greenland (UK), Prof.Dr. V. Kovda (USSR), Prof.Dr. P.A. Sanchez (USA/Peru), Dr. W.G. Sombroek (The Netherlands), Prof.Dr. J.W.B. Stewart (Canada), Prof.Dr. Y. Takai (Japan), Dr. P.B. Tinker (UK), Dr. G. Vachaud (France), Prof.Dr. G. Varallyay (Hungary) and Prof.Dr. D.H. Yaalon (Israel).

Committee on Standardization (CST), to liaise with the International Standardization Organization (ISO, Geneve-Switzerland) and its Technical Committee on Soil Quality (ISO/TC 190, NNI, Delft, the Netherlands).
Chairman: Prof.Dr. H.P. Blume (Comm. V) c/o Inst. f. Pflanzenernährung und Bodenkunde, Olshausenstrasse 40, D-2300 Kiel 1, Germany.
Members: Dr. C. Dirksen (Netherlands, Comm. I); Dr. P. Arnold (UK, Comm. II), vacancy (Comm. III), Dr. S.A. Barber (USA, Comm. IV), vacancy (Comm. VI), Prof.Dr. A. Herbillon (France, Comm. VII), vacancy (Subcomm. A), Prof.Dr. G. Stoops (Belgium, Subcomm. B), Dr. M. Romkens (USA, Subcomm. C) and Dr. M.B. Bouché (France, Subcomm. D).

Committee on Budget and Finances (CBF), instead of ad-hoc committees at Congresses.
Chairman: Dr. W.R. Gardner, College of Natural Resources, Univ. of California, Berkeley, CA 94720, USA
Members: Dr. W.G. Sombroek (the Netherlands); Dr. D. Gabriels (Belgium); three representatives of regional Societies.

Committee on Education in Soil Science (CES), with particular attention to secondary school/college level
Chairman: Prof.Dr. A. Ruellan, 2, Bd. Berthelot, F-34000 Montpellier, France

ISSS Representatives in ICSU committees/commissions

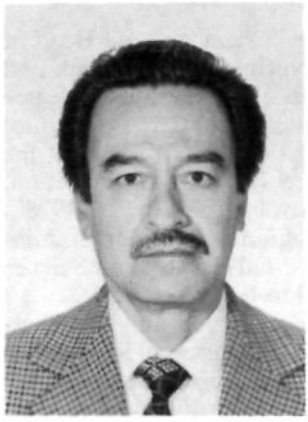
SCOPE	Scientific Committee on Problems of the Environment: Dr. F. Fournier (France).
CASAFA	Inter-Union Commission on the Application of Science to Agriculture, Forestry and Aquaculture: Prof.Dr. W.E.H. Blum (Austria).
IBN	International Biosciences Network: Prof.Dr. P.A. Sanchez (U.S.A./Peru).
COSPAR	Committee on Space Research: Dr. R.L. Karale (India).
CODATA	Committee on Data for Science and Technology: Prof. M.F. Baumgardner (U.S.A.).
TSBF	Tropical Soil Biology and Fertility programme: Prof. Dr. H. W. Scharpenseel (Germany).

Dr. Andrés AGUILAR SANTELISES, new President of the International Society of Soil Science, 1990-1994.

Dr. Aguilar was born in Mexico-City, Mexico, on August 31st, 1946. In 1970 he graduated from the National School of Biological Sciences of the National Polytechnic Institute (IPN) in Mexico and obtained a Master of Science degree in 1973 at the Wageningen Agricultural University in the Netherlands. In 1981 he earned his Doctorate in Agricultural Sciences at Wageningen working under Prof. A. van Diest; he presented a thesis on rock phosphate utilization by nitrogen fixing legumes.

Since 1974 he has been a faculty member in the Soil Department of the Chapingo Autonomous University in Mexico where he has taught soil fertility, soil chemistry and analytical chemistry and has conducted research work mainly on soil chemical analysis and soil acidity and liming .He has also occupied different positions aiming to foster agricultural research at Chapingo.

He has been an active member of the Mexican Society of Soil Science (SMCS) since 1975, serving as Secretary-General from 1987-1988 and as President from 1989-1990. His activities in the SMCS include the production of technical publications on soil chemical analysis and the organization of several symposia and congresses. During his term as President, he headed the committee which promoted Mexico as the site for the 1994 ISSS meeting. Dr. Aguilar is a member of the Mexican System of Scientific Researchers, of the editorial board of the journal Terra and an active member of several other scientific associations.



Dr. Roberto NUÑEZ ESCOBAR, new Vice-President of the International Society of Soil Science, 1990-1994

Dr. Núñez Escobar was born in Autlan, Jalisco, Mexico, on April 28th, 1934. He received his undergraduate degree in agriculture from the National School of Agriculture, Chapingo, Mexico, in 1956. His graduate studies were carried out in the United States. He received his M.Sc. degree in Soil Science from the University of California, Davis, in 1961 and his Ph.D. degree at the North Carolina State University, Raleigh, in 1967. His research activities in soil science were initiated in 1956 in a program co-sponsored by the Mexican Government and the Rockefeller Foundation. In 1961 he joined the Mexican National Institute of Agricultural Research (INIA) and in 1962 he was named professor of soil fertility in the Colegio de Postgraduados where he presently teaches the course of Fertilizer Technology and Use.

He is a founding member of the Mexican Society of Soil Science; he served as its first Secretary during 1962-1964 and as President in 1967-1969. In 1987 he was honored as a 'distinguished member' of this Society. Since 1961 he has also been a member of the Soil Science Society of America and the International Society of Soil Science. Recently he was invited to join the Mexican Engineering Academy and became am member of the Mexican System of Scientific Researchers.

Dr. Nuñez Escobar, a specialist in topics of Soil Fertility and Fertilizer Use, has advised 34 M.Sc. theses and three Dr.Sc. theses in Soil Science.

HONORARY MEMBERS

Prof. G. Aubert

Prof. Georges Aubert was born in 1913. He joined the French Soil Science Society in 1934, later he was elected President of the Society.

His main occupation tied him to ORSTOM (Institut Français de Recherche Scientifique pour le Développement en Coopération) and to the Ecole supérieure d'Agronomie, where he served until his retirement in 1982 as professor of soil science. He also acted successfully in many national and international bodies, e.g. UNESCO, UNEP, FAO. Until his retirement he acted as Director for Research of INRA.

He was the editor of the Soil Map of France in scale 1:1 Million and also author of many books and papers.

His international activity is remarkable, he visited more than 80 countries conducting soil survey and participating in meetings. His main fields of professional activity are soil geography and genesis, but he is interested also in soil salinity and alkalinity, mineralogy, etc.

He has been associated with the ISSS since 1945, as Vice President of the Society, Chairman of Commission V, etc.

Prof. Aubert's merits were appreciated with numerous awards and he is Officer of the Légion d'Honneur.

Prof. E.G. Hallsworth

Prof. Gordon Hallsworth was born in 1913 at Ashton-under-Lyne, England. He graduated from the University of Leeds, England, (B.Sc. in 1936, Ph.D. in 1939, and D.Sc. in 1964).

He started as lecturer in Agricultural Chemistry, University of Sydney, Australia, 1940, and became Senior Lecturer in 1964, and Research Professor in Soil Science in 1951.

Between 1950 and 1964 he was Professor of Agricultural Chemistry and Head of the Department of Agricultural Sciences, University of Nottingham, England, and Dean of the Faculty of Agriculture from 1951 to 1960. He designed the current degree structure of the Faculty, and instituted the Nottingham Easter Schools in Agricultural Science in 1955, now in their 35th School. From 1964 to 1973 he was Chief of the Division of Soils, Commonwealth Scientific and Industrial Research Organisation, and Chairman Land Resources Laboratories, CSIRO, Australia, from 1973 to 1978.

Prof. Hallsworth was Director of the 'Save our Soils' Programme of the International Federation of Institutes of Advanced Study, and Professorial Fellow at the Science Policy Research Unit of the University of Sussex from 1979 to 1985.

Prof. Hallsworth was the president of ISSS between 1964 and 1968, and he orchestered the organization and conduction of the 9th International Congress of Soil Science in Adelaide, Australia in 1968. He was honoured with his elections as Fellow of the Royal Society of Chemistry (F.R.S.C.), Fellow of the Australian Academy of Technological Sciences (F.T.S.), Membre de l'Académie d'Agriculture de France, and Fellow of the World Academy of Art and Science. He also received the Prescott Medal of the Australian Soil Science Society, and the Dokuchaev Medal of the All-Union Society of Soil Science.

He has been the Chairman of the standing committee on Statute and Structure of the ISSS since its foundation.

Prof. J.S. Kanwar

Dr. J.S. Kanwar was born in 1922 in India, and took his Ph.D. from Waite Agricultural Research Institute, Adelaide, Australia and did post doctorate research in California and Ohio. He served for over 40 years in various capacities in teaching, research and research administration. He spent 22 years in teaching and research in the Punjab Agricultural University.

He was Professor of Soil Science till 1962, Director of Research, Punjab Agricultural University form 1962 to 1966, and later Deputy Director General in the Indian Council of Agricultural Research from 1966 to 1973.

Dr. Kanwar is fellow of National Academy of Sciences, India and Emeritus Deputy Director General of ICRISAT since his retirement in 1988 after serving 15 years at this institute. For his outstanding achievements in soil science and contribution to national and international agricultural research and development for over 40 years he has received a number of prestigious awards and distinctions.

He was President of the ISSS between 1978 and 1982. The 12th Congress of ISSS in 1982 in New Delhi was organized under his guidance. Ever since he has participated in the activity of our society.

His books on Micronutrient Research in Soil and Plants in India (1967), Soil Fertility – Theory and Practice (1976), and Fertilizer Sulfur and Food Production (1985) are important contributions for advancement of knowledge of soil science.

He is at present a consultant to World Bank, FAO, UNDP, ICA and NABARD.

Prof. P. Schachtschabel

Prof. Paul Schachtschabel was born in 1904 in Gumperda, Germany, and he obtained a Ph.D. at the University of Jena in 1937. During acting as assistant professor at the University of Jena, he started a joint activity with Prof. F. Scheffer and as a result the famous book 'Lehrbuch der Bodenkunde' was published and it is now in its 12th edition. This textbook became a milestone in the history of our science, not only in Germany, but also abroad.

From 1948 to 1971 Prof. Schachtschabel was professor of soil science at the Technical University of Hannover, where he conducted education and research on soil chemistry, clay minerals, potassium fixation, liming, laboratory methods and many other problems.

He was Vice-President of the German Soil Science Society and from 1970 he is an honorary member of the same society.

Prof. Schachtschabel elaborated several analytical methods for soil studies, which have been adopted all over the world, such as the methods of determination of lime requirements, plant available trace elements, etc.

His activity covers all fields of soil chemistry during many decades.

Dr. Roy W. Simonson

Dr. Roy Simonson was born in 1908 and reared on a farm in North Dakota, USA. He received his training in soil science at the North Dakota Agricultural College and got a Ph.D. in 1938 at the University of Wisconsin.

After his early professional experience, he became Assistant Professor at Iowa State College. His long association with the USDA started in 1944, mainly to supervise classification and mapping in and outside the USA.

Dr. Simonson is well-known from his association with the Soil Conservation Service, where he worked from 1953 until his retirement in 1973 as Director of Soil Classification and Correlation. He visited numerous countries all over the world, mainly associated with his extensive knowledge of morphology, description and classification of soils.

He published about 75 papers, bulletins and books. He had many functions in the Soil Science Society of America and was an ISSS Council member in 1964 and 1968.

As one of the editors or the editor-in-chief, Dr. Simonson is associated with Geoderma, one of the cooperating journals of the ISSS, from its establishment in 1967 until recently. He is now Honorary Editor.

He is Honorary Member of the Soil Science Society of America and Doktor Honoris Causa of the Agricultural University of Norway.

Prof. I. Szabolcs

Prof. Istvan Szabolcs was born in Turkeve, Hungary in 1924. He graduated from the University of Debrecen, where he obtained his Ph.D. in 1948.

In 1953 he received the degree of Candidate of Agricultural Sciences in Moscow, USSR and in 1959 he became Doctor of Agricultural Sciences of the Hungarian Academy of Sciences in Budapest.

After his earlier professional experience he was associated with the Research Institute for Soil Science and Agricultural Chemistry since 1954, where he was the Director from 1959 to 1980. During these very productive years of research on soil classification and mapping, especially on salt-affected soils, he became well-known all over the world through his publications and visits.

He played an important role in our Society. From 1964 until 1982 he was the chairman of the Subcommission on Salt-affected Soils. At the 10th Congress, he was elected Deputy Secretary-General, and he fulfilled so well right through this assignment.

Dr. Szabolcs is a member of many Hungarian and international associations and editor of a number of journals, e.g. Agrochemistry and Soil Science, and Geoderma.

Dr. Szabolcs has published 10 books and more than 500 papers, for example, a book 'Salt-Affected Soils', which appeared last year. The Hungarian Government conferred onto him two awards for his scientific achievements.

REPORT OF THE AD HOC WORKING GROUP FOR POSTER STUDY/EVALUATION[1]

One of the main objectives of our society is to organize a scientific congress (Rule A3), in which every member should be given an opportunity to present results of research to the scientific community and to have them discussed.

A great increase in the number of individual contributions has forced the Organizing Committees of recent congresses to provide more and more parallel events in order to give every member an equal opportunity. A device to get rid of such a growing congestion was the introduction of poster exhibitions.

Such an exhibition gives a unique opportunity to see what happens within our worldwide community of soil scientists, what is their predominant line of interest and how they approach it. The value of such an overview is, of course, the greater, the more numerous the posters are; but simultaneously it is more difficult for an individual member to obtain a general view. The Organizing Committee of the XIV Congress tried to obtain some general information from the posters through an *ad hoc* Working Group for Poster Study/Evaluation, which would also evaluate posters to award the best poster of each commission.

The accuracy of the result given in the following tables is somewhat limited because of specific circumstances. These are: Sometimes it was difficult to find out objectives and results clearly; Sometimes it was troublesome to categorize an individual research since it had two or more main subjects and authors from two ore even more countries; Lastly it was impossible to achieve accuracy in counting because posters were being fixed to the boards throughout the whole pre-noon time; on the other hand not all announced posters were presented. Some information had to be drawn from the printed programmes (Tables 3-6), and some from in-situ inspection (Tables 1 and 2). The results of both are correlated.

From Table 1 it emerges that enhancement of knowledge and of yield of agricultural crops draw main interest. This is not new. It is, however surprising to see the low percentage of posters in which environmental protection and land reclamation are the main objectives. This is particularly so since the majority of contributions came from highly industrialized countries where soil protection draws profound public interest and concern.

From Table 2 it emerges that theoretical models got only a minor proportion and that laboratory, pot and greenhouse experiments got high proportions. The item 'sampling' might also be included in this group since sampling is usually done to obtain materials for laboratory research.

From Table 3 it can be seen that Commissions IV and V draw the greatest attention from the ISSS members. This corresponds to the results given in Table 1. The proportion of papers in Commission II is high, probably because the subject of 'N^2-fixation' was allotted to this commission. In particular this table shows: Soil-water and its behaviour are more frequently investigated than solid phase structure, i.e. compaction risk; Heavy metals form a major group within chemical soil research; Nitrogen draws about ½ of all the posters in soil fertility; Genesis and classification remain to be absolute centres of effort; Man-made changes of soils still draw relatively little attention – this is again correlated with the low attention that was directed towards environmental protection (cf. Table 1).

Apart from these results it is tempting to find out whether the lines of interest are the same over all parts of the world. For this evaluation the following country groups were made: Africa (south and east of Sahara), North America, Latin America (including Caribbean), South Asia (India, Pakistan, Sri Lanka et al.), S.East Asia (Indonesia, Malaysia, Thailand et al.), East Asia (China -Mainland and Taiwan-, Hongkong), North Asia (USSR, Korea), Australia + Oceania, Europe (excluding USSR), Japan (host country), Mediterranean + Near East.

Results of this evaluation are presented in Table 4, where the three most frequently presented themes are listed for every country-group. The percentages are calculated on the basis of the absolute number of contributions given on the left-hand of each line. It can be seen that 'sustainable agriculture in the tropics' draws first rate attention in most, but not all geographic country groups with large tropical areas. Genesis and classification is still of highest interest in Dokuchaiev's home country. Changes due to management practices are not intensively studied in countries with high agricultural production but rather in Africa and North-Asia. In the last column in Table 4 the percentages in column 1, 2 and 3 are summed up. A low percentage here shows a broad distribution of research activities, whereas a high figure shows a concentration in few topics which obviously are considered most important. Here again highly industrialized countries generally show broader distribution of interest. These results should be seen taking into account the different number of contributions which effects representativity and limitations set by the geographic background of the grouping.

[1] The Working Group consisted of 3 past presidents who were present at the congress (Drs. Hartge, Kanwar and Bentley) and one of the vice-chairmen of each commission nominated by the commission chairman (Drs. Glinski, Carballas, Yoshida, Agboola, Eswaran, Canarache and Gilkes), with Prof. Hartge as the Chairman of the Group.

Table 5 shows ranking of attention directed towards the objects of concern in our society. It is to some extent similar to Table 4, but puts more emphasis on the country-groups than on the topics. It shows that the improvement of chemical environment for plant production is considered most important in S.Asia and Africa. Physical methodology draws highest attention in Europe, whereas genesis and classification seem to attract less attention in Europe and Japan.

Finally, in Table 6, the participation in the poster exhibition from the different country-groups is listed. It reflects to some extent the travel distances as well as accessibility to financial resources.

On the whole the average number of 0.66 posters per participant or 2 posters for every 3 participants shows an extremely high estimation of this event by the members of our society. This fact should encourage Organizing Committees of the forthcoming congresses to consider a still growing importance. It presents complete and up-to-date information for scientists on what is going on in soil science in the world.

Table 1 Aims of scientific investigations

Aims	*Over all posters*
Scientific knowledge increase	64
Yield Improvement (predominantly agricultural crops)	27
Environmental protection	5
Soil reclamation	< 1
Others (not easily categorized)	4
	100

Table 2

Methodological Approaches	*Over all papers*
Laboratory Experiments (+ Greenhouse)	31
Field Experiments	19
Field Measurements	16
Others (General Information and not easily categorized)	13
Sampling for further Investigation	10
Field Observations	9
Theoretical Models	2
	100

Table 3

Importance within commissions (two most frequent items) % of all (675 = 100) absolute				Whole commission (%)
Commission				
I	3%	(=22)	Hydrological processes + solute transport	
	2.5%	(=17)	Soil physical properties and plant growth	10
II	4%	(=26)	Heavy metals, microelements	
	3%	(=21)	Organic matter	13
III	4.5%	(=31)	N_2-fixation	
	4%	(=29)	Soil ecology + microorganism	14
IV	4%	(=25)	N in plant/soil	
	3.5%	(=24)	Fertility and liming	29
V	5%	(=35)	Soil genesis and classification	
	4.5%	(=32)	Soil survey and mapping	18
VI	4%	(=25)	Soil management and sustainable agriculture in tropics	
	3%	(=21)	Changes in soil properties related to various management practices	11
VII	2%	(=14)	Mineralogy and properties of Ando soils	5
				100

Table 4

Most frequently investigated items

	Absolute number (= 100%)	First	%	Second	%	Third	%	Sum %
Africa	21	Sustainable tropical agriculture	19	N-fixation	14	Survey + mapping Changes due to practice Tropical mineralogy	10	43
North America	47	Information system	7	Erosion	7	Organic matter	7	21
Latin America	13	Information system	15	Sustainable tropical agriculture	15			30
Med. + Near East	16	Changes due to practice	18	N in plant/soil	13	Genesis + classification	13	44
Australia + Oceania	20	P, K Tropical mineralogy	10	Salt/irrigation	10	Sustainable tropical agriculture	10	30
South East Asia	43	Sustainable tropical agriculture	18	P, K	10	N-fixation	10	38
Japan	237	Ecology + microorganism	6	Hydrology Organic matter Rhizosphere N-fixation Fertilizer + lime on paddy	5	Hydrology Organic matter Rhizosphere N-fixation Fertilizer + lime on paddy	5	16
East Asia	79	Survey + mapping	13	Fertilizer + liming	7	Genesis + classification	7	27
South Asia	44	Sustainable tropical agriculture	13	Fertilizer on paddy	9	Soil physical property + plant Ion kinetics + redox N-fixation	7	29
Europe	127	Remote sensing land evaluation	6	N in plant/soil	5	Organic matter	5	16
North Asia	28	Genesis + classification	18	P,K Changes due to practice Geochemistry	11	P,K Changes due to practice Geochemistry	11	40

Table 5

Order of frequencies of allocation to Commissions

Commission	*Highest frequency*	*Lowest frequency*
I	Europe, S.Asia, N.America, Japan, SE.Asia, Africa, E.Asia, Austr/Oc.	N. Asia
II	S.Asia, N. America, SE.Asia, Europe, N.Asia, Austr/Oc., S.America, Africa	Japan E. Asia
III	Japan, S.America, Austr/Oc., Europe, N.Asia, N.America, E.Asia, Africa	Medit/Near East SE.Asia
IV	Africa, SE.Asia, Japan, Austr/Oc., N.America, SE.Asia, Europe, N.Asia	S.Asia,Medit/ Near E.
V	N.Asia, L.America, E.Asia, N.America, SE.Asia, Europe, Austr/ Oc., Japan	Africa
VI	Medit/Near E., Africa, N.Asia, N.America, Europe, Japan, S.Asia, E.Asia	Austr/Oc.
VII	S.America, Austr/Oc., Africa, Europa, Japan, E.Asia, N.America, N.Asia	S.Asia

(All country-groups per commission added up give 100%)
(Country-groups in same position means equal percentage)
(Country-groups with lower values than 10% are not listed)

Table 6 Distribution of poster contributions per country-group and relative frequency of poster per participant

Country-group	Proportion (%)	Poster per participant	Participant per poster
Africa	3	0.83	1.2
America-North	7	0.47	2.1
America-Latin	1	0.25	4.0
Asia-South	6	0.94	1.0
Asia-South-East	11	0.99	1.0
Asis-East	11	0.80	1.25
Asia-North	4	0.85	1.2
Australia/Oceania	2	0.47	2.1
Europa	19	0.65	1.54
Japan	34	0.43	2.3
Mediterranean/Near East	2	0.65	1.5
	100	X = 66	X = 1.74

THE BEST POSTERS

Comm. I	*Lebert, M. (FRG)* A Method to Predict Soil Strength
Comm. II	*Gautheyrou, M., Cautheyrou, J. & Quantin, P. (France)* Formes du Phospore d'un Andosol Soumis à l'Ecobuage; Caractérisation par RMN
Comm. III	*Ventura, W., Watanabe, I., Ramirez, C., Mascariña, G. & Padre, Jr., B. (IRRI)* Azolla, Decomposition and Availability of its Nitrogen to Lowland Rice
Comm. IV	*Ghani, A & McLaren, R.G. (New Zealand)* Studies on Organic Sulphur Transformations in Soils Using Sulphur-35 Labelling
Comm. V	*Juo, A.S.R. & Wilding L.P. (USA)* A Comparative Analysis of Agricultural Soil Resources and Land Use of Drylands in North America and West Africa
Comm. VI	*Verapattananirund, P., Nualla-ong, S., Tongyai, C. & Na Nagara, T. (Thailand)* Some Features of the Living-Mulch Management Alternative for Cassava Production in Sandy Soil
Comm. VII	*Madeira, M., Furtado, A. (Portugal), Jeanroy, E. & Herbillon, A. (France)* Characteristics of the Andisols of Madeira Island (Portugal)

CRITERIA FOR EVALUATION

The evaluation was performed by a team of judges which was appointed by the chairmen of each commission. Posters categorized to subcommissions were evaluated together with those of that commission to which their scientific content has closest connection.

Evaluation was performed individually. Most judges applied the following score system as closely as possible:

1. Presentation	1.1	ease of reading at 2m	max score	20 points
	1.2	ease of understanding activity and result		20
2. Content	2.1	scientific quality		20
	2.2	importance of topic and results		20
3. Special merits				20
		Maximal obtainable score		100

ECHOS OF THE TOURS OF THE KYOTO CONGRESS
ÉCHOS DES EXCURSIONS DU CONGRÈS DE KYOTO
BERICHTE ÜBER STUDIENREISEN DES KYOTO KONGRESS

TRANS-SIBERIAN TOUR
July 28 – August 10, 1990

The Trans-Siberian rail journey is regarded as one of the major, if not the major rail journey in the world. Couple that with a number of interesting soil profiles and one has sheer pedological delight. The journey followed the normal route from Moscow, with 2 day stops in Novosibirsk and Irkutsk, terminating in Khabarovsk after 14 days and 8300 kilometres.

There were 30 participants from various parts of Europe, USA, Burkina Faso, South Africa and 15 Soviets. Although the Soviets and non-Soviets were in separate carriages there was good mixing and a good camaraderie existed especially at party times.

The first part of the journey from Moscow to Novosibirsk appeared to be very long as we travelled through the seemingly never ending pine forest but even so, for most of us it was different as we began to comprehend the enormity of the country and the vast tracts of forests. At Novosibirsk we had our first introduction to collective farming at 'Bolshevik' collective farm where we also saw a Leached Chernozems, a Grey forest soil and a Solod within an area of forest-steppe vegetation.

From Novosibirsk to Irkutsk there is extensive cultivation of the forest-steppe area so it was possible to see the landscape more clearly. Irkutsk can be regarded as the centre of Asia with Lake Baykal being the main attraction. This lake is the largest freshwater body in the world and up to present has little pollution. All efforts are being made to preserve the lake as far as possible because the slightest amount of pollution might lead to the destruction of its unique flora and fauna. Lake Baykal also has great aesthetic appeal and for many it was the highlight of the journey. We were shown a number of soils including a Derno-Podzolic soil.

The journey from Irkutsk to Khabarovsk was the most scenic part, with hills and valleys and a patchwork of forest and grassland and finally crossing the wide Amour river before arriving at Khabarovsk station. We were shown a Podbel profile developed in fluviolacustrine deposits. This soil has many unique features the most prominent of which was a middle horizon with extremely well developed medium granular structure with the granules coated, first with organic matter and then with an outer frosting of fine sand grains. These properties seem to be superimposed upon previous features of translocation. This has many similarities with the Derno-Podzolic profile near Irkutsk and probably results from the somewhat unique continental conditions where the soils are relatively dry during summer, frozen during winter and saturated with water during the late spring due to a perched water table over frozen subsoil.

No periglacial features were examined but everywhere there was clear evidence of patterned ground. In fact one of the hypotheses for the extensive development of the forest steppe is that the forests grow in thermokarst depressions with Solods, surrounded by Chernozems beneath the steppe vegetation.

In spite of the length of the journey the time passed very quickly and no one seemed to be bored or displeased. The trains were not very luxurious but no one really expected that, however the food and hotels were very good. The fact that the trains are electrified is a major achievement and a surprise was the large amount of rolling-stock on the lines, both for passengers and goods.

This journey left one in no doubt about the size of the Soviet Union and the diversity of its plant communities and soils. It also served to demonstrate clearly that many soils have a very high degree of complexity much of which is due to polygenesis result-

ing from Pleistocene climatic change.

We all felt that major changes are taking place in the Soviet Union and that there is a positive atmosphere of perestrojka but such is the size of the country that inevitably it will take sometime for most standards to improve.

Professor Rosanov and his colleagues are to be congratulated for providing such an interesting excursion.

E.A. FitzPatrick, Aberdeen, Scotland

Participants Trans-Siberian tour, (photo Jan Boerma).

PRE-CONGRESS TOUR B

August 6-11, 1990

This tour was in the central part of Honshu, the main island of Japan, and traversed a major part of the Kanto plain, which plain is the largest in Japan (ca. 1,200 km wide) and is surrounded by mountains and volcanoes on the north and west sides and by the Pacific Ocean on the south and east sides. In contrast to the rest of Japan which is more mountainous, the Kanto district has 49% of flat area. The terraces covered with tephra deposits are used for upland crop production and the lowland area of recent alluvium for paddy rice production.

The Tohoku district, for the most part, is a singly-crop rice producing area and is the source of about one fourth of the Nation's rice supply. Much of this area has been producing rice since the end of the Edo period (1603-1867). Farm labour requirements have consistently been improved since the second world war by rearranging fields, consolidation, and mechanization. Because of increased efficiency, government price supports and other factors, agriculture in this area has become affluent.

In the hilly area of the Tohoku district many other crops are grown such as barnyard millet, buckwheat, potatoes, cabbage and Chinese cabbage. Other vegetable and fruit crops are being grown due to the opening of an express-way to Tokyo through the district and to compulsory conversion of paddy rice to upland crops. The area is impressive due to the many tidy fields, gardens and orchards. Land use is remarkably complex. The number of different garden vegetables and crops is impressive.

The Yatabe soil viewed at the first stop at Tsukuba Institute was a light coloured allophanic ando soil. This soil was remarkable for its relatively uniform brown colour, friable consistency and smeary feel attributed to allophane. The allophanic character was also evident in the loam texture observed in the field but only 3% clay by conventional particle size analysis of the surface layer. After the first soil pit was examined the group was treated to a guided review of numerous soil profile monoliths of Japanese and international soils in the soil museum at Tsukuba Science City.

The Imaichi pedon seen in the second pit was impressive because of the very dark surface layer (20% organic matter) overlying a brown subsoil underlain by a red substratum. This very colourful soil contains abundant allophane. The dark colour is attributed in part to Japanese pampas grass (*Micanthus sinensis*) and its rapid recovery when forests were removed in the past for charcoal production even though the present pedon is forested.

The Nishi-Nasuno soil at the third pit is a shallow soil formed on an alluvial fan of largely crystalline materials. It contains appreciable gravel at shallow depths thus it is used for forages when cleared at the National Grassland Research Institute.

The fourth pit was in Aizu-Wakamatsu grey lowland soil in a rice paddy area with the farmer at hand to report 5.5 ton/ha of rice yield on his soil on an alluvial plain. He also reported applying K-silicate and N-fertilizers. this soil is stratified and contained thready mottles attributed to iron oxides around roots. A positive test for ferrous iron and the dark colour of Mn oxide were reported for this soil.

Kariyama series, Pedon 5 was at the Fukushima Fruit Experimental Institute in an apple orchard. This is an acid mineral soil composed predominantly of crystalline constituents. Although the surface soil is thick and dark the organic matter content is only 3%. There was evidence of anthropic activity that caused mixing of soil material in the upper horizons, not surprising in the area studied near an institute building. This soil contains smectite, chlorite and chlorite-vermiculite intergrade with no mention of allophane or imogolite. This stop also will be remembered for the tasty peaches and apples served at the Institute.

Nagatomi series was examined in a rice paddy as pedon 6 where the production of the Sasanisiki rice is well known because it is very popular among Japanese consumers. This soil has a mineral surface layer overlying a peaty layer. Mineral soil is added where necessary to a 25cm depth to provide a favourable rooting environment for the production of rice.

The Kawatabi soil, pedon 7, was viewed at the Tohoku University farm where Dr. M. Saigusa, our major tour guide is stationed and he pointed out that the soil is a non-allophanic ando soil. The pit was exceptionally deep and was described to almost two meters. There was a thick, 75cm, dark surface layer interrupted intermittently by a thin light layer. The soil contained a little imogolite and the presence of allophane was uncertain. The presence of appreciable layer silicates here and at some other sites was attributed in part at least to loess from China.

Several cultural events were provided during the excursion. They will be fondly remembered by the tour participants. Most vivid in the writer's mind are the traditional drum performance of a local youth group, the singing of Japanese songs on the bus by Dr. Higashi, the bus stewardess and the JTB tour guide and, above all, the visit to the beautiful forest and shrines at Nikko.

Excursion B will long be remembered by the 38 persons from 18 different countries that participated in it. The thick dark surface soils with the greasy feel will be one reason. Another will be the soil profiles and agricultural practices illustrated by several colour photographs in the guidebook. The quality of provisions of food and lodging and the timely scheduling made it comfortable and enjoyable. The courteous and friendly atmosphere provided by Dr. K. Inoue, subcommittee chair and by Drs. Saigusa, major tour guide, M. Otowa, pedon descriptions, and T. Higashi, technical commentary all contributed greatly to the success of Excursion B. Andisols have made an impression on the writer and they still post many challenges – one of them being particle size determination as was noted more than once during the trip. Dr. Shoji and the entire Excursion Committee deserve a special thanks for making Excursion B a success.

J.B. Dixon, College Station, USA

PRE-CONGRESS TOUR D

August 7-11, 1990

Tour D to Hiroshima, Matsue, Tottori and, for some, Karauki was attended by about 35 overseas visitors to Japan and consisted of visits to experimental farms, farmers' fields and sites of cultural significance. Our departure from Osaka by Superexpress was spot on time and we arrived after 2 hours 27 minutes at Higashi-Hiroshima for our visit to the experimental farm of Hiroshima University. The contrast of the countryside to the continuous cities was commented on by many but the influence of people in shaping the countryside and soils was a recurring theme throughout our trip. The first soils that we saw were on deeply weathered granite; the use of a bulldozer to create a level site for pasture production followed by substantial supplements of organic matter to the upper 30 cm to create a suitable rooting medium for grass provoked much discussion. The severe drought in the region during this summer meant that we saw only poor crops of grass and the cattle in their computer-controlled feeding pens (cattle are the principal interest of the experimental farm) will not get very fat on this year's crop.

Man-made soil for grass led on to man-made soils for fruit production at the Hiroshima Prefecture Orchard Experimental Station. Grapes and mandarin oranges grown with restricted root zones allow strict control of water content in the rooting medium and optimum sugar content in the fruit. The control of root zone moisture was also a feature of our later visit to vegetable production at the sand dunes of Tottori and to rice production in a paddy field. The soil in the rice field on the alluvial plain of the River Hii gave a good example of the work necessary to maintain the cultivation pan and to slow the movement of water through the soil profile. On many occasions we saw small pockets of land, that in many countries would have been left unattended, used to produce crops of rice.

Our passage through the mountains to the Japan Sea coast also emphasised the intensity and scope of land management in Japan. The steep slopes were covered with trees supporting a forestry industry with a diverse collection of timber and forest products. Nearly all of the forests were replanted trees and few bare slopes were seen. The valley bottoms consisted of a patchwork of green rice fields.

The western coast was more sparsely populated that the Pacific coast and the small region that we saw abounded in cultural history. The shrine at Izumo-Taisha and the castle at Matsue gave some feeling to the history and culture of Japan and the presence of musicians and dancers at our dinners in Matsue and Tottori added greatly

to our understanding of the people. A visit to a newly reclaimed polder to see an acid sulphate soil raised the question of whether land reclamation from the sea was ecologically desirable and the costs (economic and human) of food production in Japan. However, these thoughts were temporarily put aside when we arrived at the prize hole of the tour – a 4-5m deep Andosol profile large enough to contain our (w)hole party. Television cameras whirred, the local mayor made a speech, students presented poster displays, 'accompanying persons' drank tea and Coke, and inexperienced pedologists like me succumbed to the tactile sensations of allophane; a marvellous occasion.

Tottori Fruit, Vegetable and Ornamental Experimental Station and the Arid Land Research Center of Tottori University (rainfall 2000mm!) again showed the technologically advanced nature of horticultural production but raised the questions of cost of production and the desirability of such intense soil and land management.

To summarise such a tour and the experiences that it offered in a few words is a difficult task but I am sure that all those who went on it would wish to thank the many people who served on the organising committees in the Prefectures that we visited and to thank particularly our guides Professor S. Ogata and Dr. M. Suzuki. For myself the Hiroshima Peace Memorial and the rejuvenated city around it were a fitting allegory for the soils and their formation and management.

P. Gregory, Perth, Australia

POST-CONGRESS TOUR CN-B

August 20-26, 1990

Over fifty soil scientists, about half of which came from Japan, participated in the soil excursion in Northeast China. The excursion started in Dalian where most of the participants arrived directly from Tokyo, although a few for some reason wanted to go through Beijing.

The program offered to us kept a nice balance between soils, agriculture and landscape on the one hand and culture, culinary experiences and sightseeing on the other. These ingredients were successfully mixed by our Chinese hosts. They made us a little bit familiar with different aspects of the industrialized Northeast of China, the part of China that knew periods of czarist Russian and Japanese foreign rule during the last century. Foreign influences in architecture are clearly visible in all large cities.

The diversified program of the tour is best characterized by an example. One day we studied a Dystrochrept, ate lots of water melon and prunes in a nice apple orchard, had our first 1000-year egg, were initiated in the culture and harvesting of prawns and visited the 1300 year old Longquan temple and its eight motto pagoda. The day ended with a guided tour through the 3-million-bicycle-city of Shenyang.

We travelled by bus and express train and looked from our reserved coach at the flat Liaohe and rolling Songnen plains and were impressed by the never ending succession of narrow and neat fields.

We were received at the Institute of Applied Ecology of the Academia Sinica at Shenyang and we got acquainted with techniques and expertise available in this research institute.

Although we studied several interesting soils, one of them deserves special attention. In the surroundings of Harbin we examined a very nice soil near Acheng with an obvious argillic horizon. In spite of the presence of this horizon, the classification of the profile was somewhat surprising: as a consequence of the properties of the A horizon and the properties of the top of the illuviation horizon, the requirements for

a mollic epipedon were met. Accordingly the soil was identified as a Argialboll. To many of us this pedon was a unique one, as were the climatic conditions of the area with mean temperatures so wide apart: July and January 23 °C and -19 °C respectively. All of us agreed: it was not just another ordinary parabraunerde or grey brown podzolic soil.

The scientific part of the excursion ended in Harbin. From here our group flew to Beijing where we had guided visits of the Forbidden City and the Summer Palace, the Ming Tomb and the Great Wall. The two stoic *Ailuropoda melanoleuca* in the Beijing Zoo were less active than the battery-driven small toy pandas we saw in the parks.

I want to congratulate the organizing committee, all people who accompanied and guided us, the specialists at each site and the interpreters. Their combined efforts made Tour China-B to a success.

J.A.K. Boerma, Utrecht, the Netherlands

TOUR CN-D IN SOUTHERN CHINA
August 20-27, 1990

Thirty participants, the majority of them from Japan, others from Germany, Italy, France, Netherlands and Israel, greatly enjoyed the eight day post-congress southern China excursion. The tour was concentrated on two separate regions, with Guangzhou (Canton) and Guilin (Kweilin) as its respective centres. While Guangzhou in the Guangdong province is part of the tropics, the Guilin region – some 400 km NW of it – belongs to the slightly less hot but equally wet subtropics (1500 to 2000 mm MAPrecipitation).

In both regions the red Ferrallisols (Chinese classification) prevail, with local variations in thickness and composition, depending on parent material or vertical zonation in the mountains. The arable soils in the deltaic and alluvial lowlands, named Paddy soils, are poorly drained, gleyed and largely anthropic. In all, six soil profiles were examined and their land use systems observed.

In the forested Dinghu mountain area, now in part a Unesco nature reserve, the effect of altitude was to give the shallow soils a yellower hue. None of the deep red soils in the lower parts of the landscape seem to have a true argillic horizon but rather a moderate, gradual increase of clay with depth. Kaolinite is generally the predominant clay mineral, but with a sufficient admixture of 10A and 14A minerals it cannot be included with the low activity clays. The partly swelling clays produce some pressure cutans and result in the generally low hydraulic conductivity, especially when the soil is compacted by cultivation. The long term intensive weathering also produced a high free Fe to total Fe ratio (over 0.5) and in some profiles iron-manganese concretions.

The Guilin district is a magnificent example of a tropical tower and cone karst, developed in Palaeozoic limestone, with isolated steepsided and bizarly shaped peaks resting on the alluvial plain only 150m above sea level. The intervening, intensively cultivated paddy soils are strongly gleyed and highly acid except where limed. Potassium deficiency was recognized by the participants by leaf symptoms, although fertilizer application seems to be common.

Explanations at the soil pits were unfortunately somewhat short and the soil-geomorphic relations or catenary soil associations have not been sufficiently studied. A beautiful example of a catenary slope effect on limestone colluvium could be seen at one stop, without being commented on. In the Dinghu mountains, questions were raised about the mode of mass movement on the steep forested slopes. The expert

care of the terraced fields by the local farmers was impressive to observe. Prof. Shizuo Nagatsuka from Japan, who actually helped in selecting and describing the examined profiles, was particularly helpful in bridging the difficulties in communication with the expert local soil scientists.

Our hosts made a great effort to balance the time spent on soil investigations and sightseeing, usually devoting half a day to each. Sights visited included parks, caves, temples, ancient tombs, arts and craft centres, and especially the scenic boat trip on the Li-Jiang river and its adjacent villages. Appreciation for this magnificent and enjoyable trip was expressed to our Chinese hosts and tour organizers during a farewell banquet.

This was undoubtedly a most memorable experience for all involved and strengthened further the bonds of friendship between participants from different countries.

D.H. Yaalon, Jerusalem, Israel

The outgoing and incoming members of the ISSS Executive Committee at the end of the closing session of the 14th International Congress of Soil Science in Kyoto, Japan, August 1990.

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

Commissions

The reports of activities of the seven Commissions for the period 1986-1990 will be published in the next Bulletin.

ISSS Working Group PT (Pedotechnique)

The Working Group Pedotechnique had a meeting at the 14th ICSS, Kyoto, Japan. The chairman, Prof.Dr. R. Horn memorized important events after the Hamburg Congress in 1986: 11th International Conference of the International Soil Tillage Research Organization (ISTRO) 'Tillage and Traffic in Crop Production', 11-15 July 1988, Edinburgh, Scotland; Nato Advanced Research Workshop on Mechanics and Related Processes in Structured Agricultural Soils, 13-16 September 1988, St.Paul, MN, U.S.A.; International Conference 'Soil Compaction as a Factor Determining Plant Productivity', 5-9 June 1989, Lublin, Poland. The Working Group played a role in each of these events, by organizing parallel Working Group meetings, presentation of the Working Group objective through papers, and presenting pedotechnical results.

The Working Group has 63 members from 25 countries. Due to other commitments, Ir. C. van Ouwerkerk wished to resign from his post as a secretary of the Working Group PT. After thanks were expressed to him for his great effort, Dr.Ir. A.J. Koolen, Wageningen, the Netherlands, was elected as the new secretary.

At the 14th ICSS, the Working Group PT organized a symposium 'Pedotechnical approach to present-day soil tillage and field traffic problems' and presented several posters. These papers will be published in a special issue of 'Soil Technology'.

During the meeting there appeared to be a need for a clearer, or narrower, objective of the Working Group. Pedotechnique has a sound definition. The Working Group objective is to improve and to broaden the use and development of pedotechnical principles and methods. Working Group activities may be at a general level, like hand outs at conferences or a newsletter, or specific, like encouraging scientists to standardize measuring techniques. Exchange of knowledge and experience among Working Group members is important. Thus, e.g. Dr. A. Canarache (Soil Science Research Institute, Bd. Marasti 61, Bucharest 71331, Rumania) informed the group that a set of 13 experimental fields with induced surface compaction is under way in Rumania.

Soil handling includes ploughing in fall, compaction, secondary tillage, sowing. Corn (monoculture) is grown in most cases. Bulk density, pF curve, hydraulic conductivity, penetration resistance, aggregate stability, nutrients etc. are determined. These experimental fields are available for specific research to members of the Working Group wishing to use samples or field observations of any other kind than those originally planned. For further information please contact Dr. Canarache. If there are further experimental sites, which can be used by other colleagues, please inform the secretary. Dr. W.B. Voorhees will organize a Working Group meeting at the 12th International Conference of the International Soil Tillage Research Organization, Ibadan, Nigeria, 1991. The third Workshop on Mechanics and Related Processes in Structured Agricultural Soils will be organized by Prof.Dr. R. Horn, 1992, in Kiel, Germany.

A.J. Koolen, Secretary

Address: A.J. Koolen, Secretary ISSS Working Group PT, Tillage Laboratory, Agricultural University, Diedenweg 20, 6703 GW Wageningen, the Netherlands.

ISSS Working Group FS (Forest-Soil Relationship)

Resolutions at the 1st International Symposium on Forest Soils, Harbin, China, July 22-27, 1990.

1. That, in consideration of increasing world population and the need for greater production of wood, fibre and other forest products, there is an urgent need to maintain or increase the productive capacity of the world's forest soils.
2. That, due to the importance of forest trees for ameliorating adverse soil conditions and for functioning as filters for removing pollutants, as regulators of water flow and soil erosion, national and international efforts to study forest soils be intensified.
3. That, to provide uniformity in interpreting information on soils, standard systems for soil taxonomy and forest floor classification be promoted.
4. That, to enable comparison of results and to ensure high quality, international standard methodology for soil physical, chemical and biological properties be adopted.
5. That, to provide future reference for the purpose of assessing changes in soil properties caused by, for example, global climate change, acid rain, fire and forest management practices, the establishment of an international network of benchmark forest soil ecosystems be initiated.
6. That, because of the diversity of forest soils and research questions and also because of differences in scientific and technological development in various regions, there is a need to promote communication, exchange, teaching and training programmes and collaboration among forest soil researchers throughout the world. In order to promote the development of the international forest soil science, it would be essential and beneficial to hold the international symposium on forest soils in different countries every 2-3 years.

REPORTS OF MEETINGS
COMPTE-RENDUS DE REUNIONS
BERICHTE VON TAGUNGEN

Vth INTERNATIONAL MEETING OF THE INTERNATIONAL HUMIC SUBSTANCES SOCIETY

Nagoya, Japan, 4-7 August, 1990

Immediately preceding the 14th ISSS Congress in Kyoto, the 5th International meeting of the International Humic Substances Society was held at the nearby town of Nagoya and attracted about 100 participants from 30 countries. The Society concerned was founded in 1980, with adherents of an original ISSS Working Group on Soil Humic Substances getting together with specialists on humic substances in sediments and waters.

In its 10 year lifespan the IHSS has been very active: 5 biannual meetings, each with its published proceedings; 3 state-of-the-art books, and several publications in association with the American Society of Agronomy*.

The IHSS also started a standard and reference collection of terrestrial and aquatic humic substances which is now complete and available and already used by many researchers in the subject. There is also a set of IHSS procedures of humic substances analysis, though not formalised.

Humic substances are receiving more and more attention (global Carbon cycle, effect on N_2O and CH_4 processes; recipients of contaminants pollutants – trace/heavy metals, pesticides; critical loads; soil fertility determinants).

The IHSS is providing basic information on methods of analysis, and to elucidate the base structures of humic substances studies were made in the analytical techniques: ^{13}C. NMR, FTIR, ESP; pyrolysis; mass spectrometry; chromatography (see Humic Substances I; Aiken et al., 1985). At the present meeting it was apparent that now all the essential building blocks of humic substances can be identified and quantified. A very interesting and elegantly simple scheme of essential molecular structures was presented by Dr. Schultes of F.R.G., and it is obvious that the puzzle of the structure of humic substances – 'the work of the devil' – is about to be solved! Hence-forward attention will be drawn to interactions between humic substances-minerals-microbes. From the Nagoya meeting arose a working group on these interactions – and it successfully applied for working group status of 'grandmother' ISSS.

The sixth and seventh meetings of IHSS will be in 1992 and 1994 respectively, the latter immediately preceding the Acapulco Congress of ISSS.

*) see list under 'New Publications', p. 63.

W.G Sombroek, Wageningen, the Netherlands

SECOND INTERNATIONAL SYMPOSIUM ON PLANT-SOIL INTERACTIONS AT LOW pH

Beckley, West Virginia, USA, June 24-29, 1990

The Second International Symposium on Plant-Sol Interactions at Low pH, held at Pipestem Resort State Park, was organized by the Appalachian Soil and Water Conservation Research Laboratory of the United States Department of Agriculture, Agricultural Research Service. Dr. R. Paul Murrman served as Symposium Organizing Committee Chairman.

Approximately 200 scientists from 30 countries attended the symposium. The scientific program consisted of four days of presentations and a one-day field trip. There were 180 oral and poster presentations in eight sessions. Major areas covered in the sessions included chemistry of acid soils, fertility of acid soils, management of acid soils, microbial relations in acid soils, physiology/biochemistry of acid stress tolerance in plants, identification of acid-tolerant plants, and genetics/breeding of acid-tolerant plants. The Proceedings of the symposium will be published as a book in the series 'Developments in Plant and Soil Sciences' by Kluwer Academic Publishers, Dordrecht, the Netherlands. Selected papers from the symposium will appear in a special issue of the journal Plant and Soil.

Dr. Pedro Sanchez, USA, gave the overview presentation for the soil sessions of the symposium. Dr. Sanchez discussed the management of acid soils in the tropics. Major topics covered in the soil sessions included development of rapid methods to predict lime requirement and potential toxicity of aluminum and manganese, impact of soil acidity on nutrient availability and utilization, impact of soil acidity on microbial populations and plant-microbial interactions, processes of soil acidification, and development of methods to partially ameliorate subsoil acidity.

Prof.Dr. Horst Marschner, Germany, gave a presentation on 'Mechanisms of adaptation of plants to acid soils' to introduce the plant sessions of the symposium. Major topics covered in the plant sessions included biochemical mechanisms of aluminum toxicity and tolerance in plant cells, physiological mechanisms of aluminum tolerance, development of rapid methods to identify acid-tolerant plants, and problems and progress in the genetics and breeding of acid-tolerant plants.

The Third International Symposium on Plant-Soil Interactions at Low pH will be held in Australia in 1993. Host institutions for the symposium will be the Department of Agriculture, University of Queensland, and the Queensland Department of Primary Industries.

R.J. Wright, Beckley, West Virginia, USA

Short report of

TSBF Vth WORKSHOP AND BOARD OF MANAGEMENT MEETING

Herstmonceux, England, June 3-10, 1990

The Vth Workshop TSBF (Tropical Soil Biology and Fertility Programme of IUBS and UNESCO for the Tropical Decade) was conducted in Herstmonceux, Sussex, England, comprising status report of the 9 Programme Centres in Yurimagua, Peru; Mapire, Venezuela; Ticoporo, Venezuela; Luquillo, Puerto Rico; Rubber Research Institute, Sri Lanka; Lam/Bor/Fer/Bou, Côte d'Ivoire; Marondera, Zimbabwe; Nylsvle, South Africa; Brigalow Village and Narayen, Australia; briefing of the Workshop/Network participants, and formulation of results of the six major segments of TSBF Network Activities with regard to influence of organic matter:
(1) Site Characterization, (2) Integration, Modelling, (3) Synchrony (between nutrient release of the organic matter and nutrient requirement by the crop), (4) Soil organic matter, (5) Soil Fauna, and (6) Soil water. The results were upgraded to be introduced in the compartmentalization model by Parton, who himself was guiding the procedure.

From recent and current research the data base for a new TSBF Research Report, which is supposed to be ready at TSBF VI in 1991, was collected during the workshop and harmonized for the editing process. One day was devoted mainly to Expert System Development (modelling) and the definition of a TSBF contribution within the framework of the forthcoming IGBP project.

Furthermore, all results were reported to the Board of Management who met June 9 and 10 to discuss future programme developments including cooperation and sharing of facilities with other organizations, such as IBSRAM and ICRAF.

All participants agreed, that funding possibilities for the time after expiration of the tropical-decade-contract (end of 1992) should be explored in order to bring the elaborated TSBF methodology to sustained application, to the fullest advantage of tropical soil management.

H.W. Scharpenseel, Chairman CIP

Vth INTERNATIONAL CONGRESS OF ECOLOGY

Yokohama, Japan, August 23-30, 1990

The Congress was very well organized by the International Association for Ecology (INTECOL) and was attended by about 1400 delegates, approximately 650 from Japan.

INTECOL is an umbrella organization for a number of ecological societies, which organized symposia during the congress, such as landscape ecology, tropical ecology, theoretical ecology, etc. Microbial ecology is missing from this list. This is unfortunate because microbial ecologists and population and systems ecologists have a lot to learn from each other in areas that were extensively dealt with during the congress, such as stability, structure and functioning of (soil) ecosystems; food webs; and indirect effects in ecological networks.

The congress symposia fell into three categories: (1) Future perspectives in ecology; (2) Ecology and human activities; and (3) Ecology in Asia.

Dr. F.B. Golley, president of INTECOL, mentioned the following areas of ecology that need more input in the near future: (1) Education, in particular field education: the latest generation of ecologists has much less field experience than earlier ones; (2) Global centers for ecological research: why do they exist for all sorts of disciplines, including environmental sciences, but not for ecology?; and (3) Urban ecology: half of the world population in 2000 lives in city areas.

Worth mentioning is the foundation of the Japanese Society for Tropical Ecology. This is probably going to be one of the most influential ecological societies involved in tropical ecology research, which seems to have been inspired by the growing awareness in Japan of the involvement of the industrialized world in the destruction of natural habitats in the tropics and the responsibility to do something about it.

The proceedings of the whole congress will not be published in one volume. The papers of the symposium on 'Structure an functioning of soil communities', organized by Dr. T. Abe (Japan) and Dr. B. Striganova (USSR) are to be published in a special issue of one of the regular scientific journals. Papers include work on groups of organisms, such as arthropods or earthworms, on food webs and biological processes in soil ecosystems and on interrelationships between soil biota and soil structure.

L. Brussaard, Haren/Wageningen, The Netherlands.

Short report of
'STABLE ISOTOPE' SYMPOSIUM
Vienna, Austria, October 1-5, 1990

From October 1-5 1990 the Joint Division of FAO and IAEA (Int. Atomic Energy Agency) conducted and International Symposium on 'The Use of Stable Isotopes in Plant Nutrition, Soil Fertility and Environmental Studies', which had been expected for some time already by the traditional users of stable isotopes among ISSS soil hydrology, soil fertility and soil organic matter specialists. Biological nitrogen collection work (BNC) was particularly emphasized as well via enrichment with ^{15}N as by ^{15}N natural abundance measurement. The participants had all been nominated to the Agency by their national Research Ministries.

The total programme comprised 14 sessions with at least one invited speaker each and a poster exhibition/session with 46 posters exhibiting original unpublished results. The full text of the papers and of the extended abstracts pertinent to the posters will be published in the Proceeding Volume, which should become key literature for soil scientists applying ^{2}H, ^{13}C, ^{15}N, ^{18}O and ^{34}S.

H.W. Scharpenseel, Hamburg, Germany

SEMINAR ON SOIL EROSION UNDER MEDITERRANEAN ENVIRONMENT CONDITIONS
Menéndez Pelayo International University, Valencia, Spain, July 1990

At this seminar a panel of experts analyzed the current water erosion situation, considering environmental degradation as the most serious mechanism in the Mediterranean catchment area. The influence of fluctuations or changes in climate, aggressivity of Mediterranean rainfall, study and research methodologies, specific processes of a geographical scope, study of the process using mathematical models, methods to combat erosion using land use planning and soil and water conservation techniques adapted to Mediterranean socio-economic conditions were also analyzed.

The seminar was held under the direction of Jose Luis Rubio (CSIC, Valencia), with Adolfo Calvo (University of Valencia) acting as secretary. It was very well attended by scientists of many disciplines from all over Spain. The lectures were given by experts from Spain and from other European countries. Some of the conclusions were: (1) Erosive processes seriously affect natural resources, agricultural and forestry production, and infrastructures; (2) It is important to increase the awareness towards land degradation; (3) Suitable cartographic documents and databases should be established for the study of currently and potentially affected areas; (4) Soil and water conservation methods adapted to Mediterranean conditions should be developed: (5) Regions with major degradation risks and with greatest ecological and economical impact should be identified.

J.L. Rubio and A. Calvo, Valencia, Spain

10th WORLD FERTILIZER CONGRESS OF CIEC

October 21-27, 1990, Nicosia, Cyprus

The International Scientific Centre of Fertilizers (CIEC), with the cooperation of the Agricultural Research Institute of the Ministry of Agriculture and Natural Resources of Cyprus organized the 10th World Fertilizer Congress in Nicosia between 21 and 27 October 1990 under the title 'Efficient Fertilization, Manuring and Irrigation for Improving Crop Yield, Food Quality and Renewable Resources'.

The National Organizing Committee, under the honorary chairmanship of the Ministry of Agriculture and Natural Resources of Cyprus and presided by Dr. C.S. Serghiou properly prepared the Congress, which was attended by more than 300 participants representing more than 25 countries and international organizations. Prof.Dr. D.J. Jelenic, President of CIEC held a short opening address, which was followed by the Introduction by Dr. Serghiou. The Ministry of Agriculture and Natural Resources of the Republic of Cyprus, Mr. A. Gavrielides, held a speech also at the Opening Ceremony.

The professional programme of the Congress consisted of three parts: (1) Plenary lectures during the first day; (2) Working group activities on the second and fourth day; and (3) Excursions on the third day. The last day, the closing session took place.

The five plenary lectures were on the following topics: (A) Fertigation for efficient use of inputs; (B) Estimation of nutrient requirements of crops by means of soil and plant testing as a prerequisite for adequate use of fertilizers; an overview of development and performance; (C) Fertilizer characteristics and behaviour; (D) Use of wastes in agriculture; and (E) Fertilization in multi-purpose forestry and its role in mitigating the decline of world's forest resources.

The Working Group Sessions covered the above described topics and more than 100 papers were presented. Additionally, a specific session took place, devoted to the application of AGROSTEMIN.

Two professional excursions were organized on October 24, both visiting farms and irrigation systems and the beauties of the island.

At the closing session, the achievements of the organization and the results of the Congress were presented by the chairmen of the working groups and by the President and Vice-President of CIEC. Before the closing of the Congress, Prof.Dr. I. Láng, Secr.Gen. of the Hungarian Academy of Sciences, Vice President of CIEC, delivered a lecture on modern global aspects of sustainable agriculture, application of fertilizers, with regard to major environmental problems.

The 10th Congress of CIEC was crowned with success which is the merit not only of the speakers and contributors but to a great extent of the organizers. Their warm hospitality and the natural beauty of Cyprus will definitely remain a long memory for all participants.

I. Szabolcs, Budapest

METODOLOGIAS DE ESTUDIO DE LOS PROCESOS DE EROSION HIDRICA DEL SUELO EN ESPAÑA

Santiago de Compostela, España, Octubre 18-20, 1990

El pasado mes de Octubre se celebró en Santiago de Compostela una reunión científica sobre 'Metodologías de los procesos de erosión hídrica del suelo en España'. La reunión fué patrocinada por la Universidad de Santiago de Compostela, el Consejo Superior de Investigaciones Científicas, la Xunta de Galicia, la Secretaría General del Medio Ambiente (MOPU) y el Seminario de Estudos Galegos.

La iniciativa de la reunión surgió en los ambientes científicos relacionados con el tema, al ponerse de manifiesto la necesidad de una reunión de análisis crítico metodológico dado que en los últimos años el interés por los procesos de erosión del suelo en España se ha incrementado extraordinariamente en el ámbito de distintos organismos y entidades dedicadas a la investigación científica. Ello ha originado una situación en la que frente a un periodo anterior caracterizado por una gran penuria de datos e información, actualmente están proliferando equipos y grupos de investigación que de manera inconexa están abordando distintos aspectos del problema.

Ante esta situación urgía contrastar las muy numerosas iniciativas, para evitar duplicaciones y reiteraciones, para utilizar los recursos humanos e infraestructuras con mayor eficacia y para discutir y tratar de alcanzar un acuerdo sobre las metodologías más apropiadas al estudio de la erosión hídrica en España.

Por todo ello se convocó esta reunión, a iniciativa de diferentes grupos de investigación, con los objetivos expresos de: a) Puesta en común de las distintas experiencias españolas; b) Análisis en profundidad y crítico de los métodos aplicados; c) Propuestas para una metodología común.

La reunión se estructuró en ocho bloques temáticos en los que cada ponente expuso brevemente los aspectos más sobresalientes de la problemática conceptual, metodológica, instrumental o analítica destacando los puntos conflictivos y los problemas de diseño experimental de cada temática sectorial. Después de cada exposición se dedicó un amplio espacio de tiempo a la discusión abierta entre todos los participantes (un total de 86).

Los temáticas desarrolladas fueron las siguientes: Datos climáticos; Flujos de agua en el suelo; Escorrentias, caudales y transporte en cuencas; Erosionabilidad y otras propiedades del suelo; Vegetación (cobertura, biomasa y enraizamiento); Medidas microtopográficos de la erosión; Medidas de la erosión en parcelas experimentales; y Fotointerpretación y erosión.

Las sesiones científicas finalizaron con una discusión general y una propuesta preliminar de conclusiones (tanto generales como temáticas) que fueron aprobadas en asamblea general por los participantes.

Como complemento de la reunión se realizó un viaje de campo que incluía la visita a la instalación de parcelas de erosión de El Pedroso (Santiago) a y la cuenca experimental de Castrove (Centro Forestal de Laurizan). Los interesados en recivir las conclusiones de esta reunión pueden dirigirse a uno de los coordinadores.

José L. Rubio, CSIC, Valencia
Francisco Díaz-Fierros, Univ. de Santiago de Compostela

SOILS AND LANDSCAPE EVOLUTION

Binghamton, NY, USA, October 6-7, 1990

The 21st annual Binghamton Geomorphology Symposium was devoted this year to the subject of Soils and Landscape Evolution. Some 160 participants attended, mostly American, with a sprinkling of overseas visitors from England, New Zealand and Israel.

Overview addresses on soil geomorphic research and surficial processes were given by P.W. Birkeland, W.B. Bull, A.J. Gerard, L.D. McFadden and D.H. Yaalon. The latter developed the theme of reversed catenas and the recognition of steady state disturbance. The main theme of the contributed papers were soil forming processes and development on hillslopes, stable landforms and terraces of various ages. Most papers were fine examples of detailed local studies and keen observations of soil genesis and landscape evolution, as affected by certain factors, well supported by laboratory analyses. Most of the American papers originated either in the Western of Easter states, while the Midwest – previously the focus of soil geomorphic studies – was hardly represented. It is no longer a surprising recognition that eolian addition to soils, and its effect on them, is a significant and common occurrence in various landscapes.

Most of the papers were already published as a special volume of Geomorphology (Vol.3, No. 3/4, 1990, Elsevier) which is highly recommended to all pedologists. It also includes a memorial to Ran Gerson of Jerusalem, Israel, to whose memory the Symposium was dedicated. The organizers, Peter Knüpfer and Les McFadden, did a fine job in promoting interdisciplinary soil geomorphic studies.

D.H. Yaalon, Jerusalem, Israel

CONFERENCE ON SOIL AND AGRO-ECOSYSTEMS PRODUCTION

Bratislava, Czechoslovakia, October 22-25, 1990

The Conference 'Soil and Agro-Ecosystems Production' was organized on the occasion of the 30th anniversary of the Soil Fertility Research Institute in Bratislava.

The main mission and objectives of this meeting were to present and confront research results of the relationship between the soil and land properties and crop yields from a view-point of rational land use and soil productivity potential increase in biologically equilibrated agricultural landscape. The Conference was divided into three sections: 1) Analysis and Evaluation of Soil and Environmental Influence on Crop Yields; 2) Soil Fertility and Agricultural Systems; 3) Modelling of Agro-Ecosystems Production Potential.

In the three days session 20 participants from abroad (Austria, Bulgaria, Hungary, The Netherlands, Poland, Romania, USSR, Yugoslavia) and 113 domestic participants took part. The Conference was opened by speech of the Minister of Agriculture of the Slovak Republic, Dr. Michal Džatko, and the ISSS Secretary-General Prof. Winfried E.H. Blum. All papers presented at the Conference were published in proceedings, some additional, including Conference conclusions, will be published soon, in the Soil Fertility Research Institute Journal 'Pôda' (soil).

Bohdan Juráni, Bratislava, Czechoslovakia

SIXTH EUROPEAN MINISTERIAL CONFERENCE ON THE ENVIRONMENT

Resolution No. 1 on Soil Protection.

The Ministers taking part in the Sixth European Ministerial Conference on the Environment;

Having examined the feasibility study on possible national and/or European actions in the field of soil protection;

Recalling Resolution No. 1 on the protection and management of the national heritage in rural areas adopted at their fifth session in 1987 in Lisbon, which recommended, inter alia, to the Committee of Ministers of the Council of Europe to study the possibility of drawing up an appropriate draft Convention on soil protection;

Taking into account the Recommendation concerning the European Conservation Strategy adopted at the present session, which contains, in the section devoted to sectorial aspects, a whole chapter on qualitative soil protection and on land use;

Considering the importance of the functions of the soil, not only from the ecological point of view (biomass production, filtering, buffering and transforming actions; biological habitat and genetic reservoir) but also from the human point of view (physical medium, source of raw materials, cultural heritage);

Considering the threats on soil, particularly those of human origin but also those of natural origin, which can cause serious damage, some of which is irreversible;

Convinced that soil is a natural non-renewable resource of vital importance for mankind, both present and future generations;

Considering the advisability of undertaking, both at national and international level, appropriate action for soil protection, understood in a broad sense, covering not only specific policies for soil conservation but also policies to encourage a rational use of land, as well as to control potentially harmful activities;

Convinced that such protection a fundamental aspect of environmental conservation, should, because of the multiple causes of soil deterioration and the interaction between diffuse and specific influences, have a comprehensive character;

1. RECOGNISE the importance of a comprehensive and integrated policy of soil protection, both at national and international level, which would go beyond the efforts made so far;

2. RECOMMEND the Committee of Ministers of the Council of Europe to undertake a step by step action which, starting with a Recommendation, will set up a Work Programme implying concrete initiatives for soil protection and would end up, as appropriate in the light of experience, with the elaboration of a framework-convention in 1993 and of possible additional protocols ensuring legal certainty for the future.

Brussels, 11-12 October 1990

NEWS FROM THE NATIONAL AND REGIONAL SOCIETIES
NOUVELLES DES ASSOCIATIONS NATIONALES ET REGIONALES
BERICHTE DER NATIONALE UND REGIONALE GESELLSCHAFTEN

New National Society: Zambia

The Soil Science Society of Zambia, created in January 1990, aims among other things to provide a forum for soil scientists to exchange and share ideas on the development and management of Zambian soils.

The composition of the first executive committee reads as follows:

President:	Dr. V.R.N. Chinene
Vice-President:	Dr. A.M. Bunyolo
Secretary:	Mr. C. Lungu
Vice-Secretary:	Mr. S.B. Sokotela
Treasurer:	Dr. J. Lenvain
Committee Member:	Mr. A. Commissaris
Committee Member:	Mr. A. Mapiki

Address: Mr. Christopher Lungu, Secretary of the SSSZ, Mount Makulu Central Research Station, Soil Survey Unit, Private Bag 7, Chilanga, Zambia.

New National Society: Ethiopia

On the final day of the second Natural Resources Conservation Conference held in Addis Ababa (May 10-12, 1990) the Ethiopian Society of Soil Science was officially established. The meeting was attended by 80 participants and more than 3/4th of them were registered as active members of the Society.

Prior to the elections and discussion of the draft constitution, Dr. Sahlemedhin Sertsu, Chairman of the ad-hoc Committee responsible for organizing the general assembly gave a progress report on the tasks accomplished during the year in order to make the first assembly successful. Dr. Tamirie Hawando, formerly Vice-President for Research and Extension at Alemaya University of Agriculture, made an opening speech in which he strongly urged the need of having a soil science society that would help tackle the country's soils problems in a coordinated approach.

Following the discussion and adoption of the constitution the following were elected to be executive committee members for 1990/91:

President:	Dr. Sahlemedhin Sertsu
Vice-President:	Dr. Asnakew Woldeab
General Secretary:	Dr. Tekalign Mamo
Treasurer:	Mr. Fikru Abebe
Auditor:	Dr. Asfaw H/Mariam
Editor:	Mr. Kefeni Kejela
Associate editor:	Mr. Messele Fisseha
Public Relations Officer:	Mr. Getachew Alemu

The next meeting of the society will be held in 1991.

Address of the President: National Soil Laboratory, P.O. Box 5536, Addis Ababa, Ethiopia.

Address of the Secretary: Agricultural Research Center, P.O.Box 32, Debre Zeit, Ethiopia.

Nouvelle Association Régionale: Association Ouest et Centre Africaine de la Science du Sol / West and Central African Association of Soil Science.

L'Association Ouest et Centre Africaine de la Science du Sol a été créée en Janvier 1987 à Yaoundé, Cameroun. Elle regroupe les pédologues de 23 pays: Bénin, Burkina Faso, Cameroun, Cap Vert, Centre Afrique, Côte d'Ivoire, Congo, Gabon, Gambie, Ghana, Guinée, Guinée Bissau, Libéria, Mali, Mauritanie, Niger, Nigéria, Sénégal, Sierra Léone, Sao Tomé et Principe, Togo, Tchad, Zaïre.

Ses objectifs essentiels sont: (1) Institutionnaliser les échanges d'expérience et d'idées entre pédologues dans la sous-région; (2) Conseiller les institutions agricoles des pays membres sur la bonne utilisation, la gestion et la conservation des ressources en sols pour des rendements croissants et soutenus; (3) Standardiser les travaux de recherche en sol dans la sous-région; (4) Promouvoir et coordonner des activités des associations nationales de pédologie dans la sous-région; (5) Passer en revue lors de réunions périodiques les principaux problèmes de sols relatifs à la production agricole dans la sous-région et proposer des recommandations appropriées; (6) Maintenir une liaison avec des organisations et organismes internationaux qui s'intéressent au développement agricole et au transfert des techniques agricoles appropriées de la planification et de la gestion dans la sous-région.

Le bureau exécutif, élu le 11 Novembre 1990 en Côte d'Ivoire se compose de la façon suivante:

Président:	M. Mamadou Ouattara (Niger)
1er Vice-Président:	M. John Fye (Gambie)
2e Vice-Président:	M. Alexandre Da Costa De Silva (Guinée Bissau)
3e Vice-Président:	M. Dalla Diarisso (Mali)
Secrétaire-Général:	M. Lamourdia Thiombiano (Burkina Faso)
Secrétaire-Général Adj.:	M. Nadi Opara (Nigéria)
Trésorier:	Mme Rockhaya D. Fall Ba (Sénégal)
Trésorier Adjoint:	M. Mamadou Fofana (Côte d'Ivoire)

Adresse: M. L. Thiombiano, Secrétaire Général, Bunasols, BP 7142, Ouagadougou 03, Burkina Faso.

Soil Science Society of Turkey

At the 1990 annual meeting of the Society, the following officers were elected:

President:	Prof.Dr. Nuri Munsuz (Ankara University)
Vice-President:	Dr. Nazmi Igen (Inst. Y. Mahalle, Ankara)
Secretary-General:	Dr. Nedret Durutan (Field Crops Research Center, Bakanliklar-Ankara)
Treasurer:	Assoc.Prof.Dr. Orhan Doan (Central Soil Water Research Institute, Bakanliklar-Ankara)
Members:	– Dr. Mengü Güler (Field Crops Research Center, Bakanliklar-Ankara) – Dr. Nurgül Küçükçakar (Central Soil Water Research Institute, Bakanliklar-Ankara) – Msc. Fikret Eyübolu (Inst. Y. Mahalle, Ankara)

Address: Dr. Nedret Durutan, Field Crops Research Center, P.K. 226, Bakanliklar-Ankara, Turkey.

Malaysian Soil Science Society (MSSS)

The new office-holders of the Malaysian Soil Science Society are:

President:	Dr. Wan Sulalman Wan Harun
Immediate Past-President:	Dr. Sharifuddin Hj. Abdul Hamid
Vice-Presidents:	*Peninsular Malaysia:* Dr. Mohd Zahari Abu Bakar
	Sabah: Mohinder Singh Kalsi
	Sarawak: Hamdan Jol
Honorary Secretary:	Dr. Shamshuddin Jusop
Honorary Ass. Secretary:	Dr. Abdul Aziz Bidin
Honorary Treasurer:	Daud Chinta
Honorary Ass. Treasurer:	Mohamad Sabtu
Committee Members:	Dr. Alias Husin
	Dr. Peter Lim Kim Huan
	Dr. Ghulam Mohamad Hashim
	Dr. Abdul Manaf Mohamd Radzi
	Goh Kah Joo

Address: Malaysian Society of Soil Science, P.O. Box 12644, 50784 Kuala Lumpur, Malaysia.

Hellenic Society of Soil Science (HSSS)

The third panhellenic congress of soil science was organized by the HSSS. It was held in Athens at the Institute of the Mediterranean Forest Ecosystems. The general title of the Congress was: 'Soil Conservation-Quality of life'.

Fifty papers were presented by 92 scientists members and non-members of HSSS, covering a wide range of topics, including: soil erosion and protection, soil mapping and its contribution to conservation, soil fertility, soil pollution, and salt affected soils.

About 200 scientists participated in this important scientific event from all over the country. Useful conclusions were drawn with respect to soil conservation and soil management. All participants stressed the need for the intensification of the relevant research on soil erosion, which is indeed a determinant and decisive factor of the 'Quality of Life'.

Within the context of the programme, elections were also held on April 27, 1990, for the new term 1990-1992. The following were elected for the Administrative Board:

President:	Dr. C. Apostolakis, Nuclear Research Center 'Democritos', Ag. Parskevi Attikis
Vice-President:	Dr. A.D. Simonis, Soil Science Institute, Thessaloniki
Secretary-General:	Mr. P. Koukoulakis, Soil Science Inst., Thessaloniki
Treasurer:	Dr. S. Alexandris, Forest Res. Found., Thessaloniki
Members:	Dr. K. Panayiotopoulos, Assoc.Prof. 'Aristotelian' University, Thessaloniki
	Dr. N. Sidiras, Assoc.Prof. Agric. Univ. of Athens
	Mr. Ch. Tsantilas M.Sc., Agric. Bank of Greece.

Address: Secretary of the E.E.E., Prodromos H. Koukoulakis, Soil Science Institute, GR-541 10 Thessaloniki, Greece.

New Zealand Society of Soil Science

Goals of the New Zealand Society of Soil Science:

a) To promote the study of soil science
b) To increase awareness and scientific understanding of soil as a natural resource
c) To promote sound planning and management of the environment based on an understanding of the qualities and limitations of soils
d) To promote high standards both within the profession of soil science by those who practice the science, and by those bodies employing soil scientists
e) To ensure that the Society provides an efficient service to its members, to soil science, and to those who practice the science.

From: New Zealand Soil News, vol.38,n,,4, 1990

Address: New Zealand Society of Soil Science, c/o N.Z. Soil Bureau, Private Bag, Lower Hutt, New Zealand.

British Society of Soil Science

At the 44th Annual General Meeting of the Society in Edinburgh, September 18, 1990, the following Officers were elected:

President:	Prof. G. Spoor, Silsoe College
Vice-Presidents:	Prof. A. Wild, University of Reading
	Dr. D. Greenwood, Institute of Horticulture
Hon. Secretary:	Dr. S. Nortcliff, University of Reading
Hon. Treasurer:	Dr. T. Batey, University of Aberdeen
Hon. Editor JSS:	Dr. D. Rimmer, University of Newcastle
Hon. Editor SU&M:	Prof. J. Catt, Institute of Arable Crops
Asst. Secretary:	Dr. C. Vincent, NERC, Swindon
Asst. Treasurer:	Dr.M. Adey, University of Newcastle
Auditor:	D. Macpherson & Co., Aberdeen

Bodenkundliche Gesellschaft der Deutsche Demokratischen Republik

Vom 12-14.6.1990 führte die Bodenkundliche Gesellschaft der ehemaligen DDR (BG) in Frankfurt/O. ihre 18. und letzte wissenschaftliche Tagung mit internationaler Beteiligung unter dem Thema 'Effektive ökologiegerechte Landnutzung' durch. Dazu wurden sowohl Plenarvorträge gehalten als auch eine umfassende Posterdiskussion und eine eintägige Exkursion zu bodenkundlichen-ökologischen Problemen durchgeführt.

In geheimer Abstimmung ist noch einmal ein neuer Vorstand gewählt worden, der sich wie folgt zusammensetzt:

Vorsitzender:	Prof.Dr. I. Lieberoth, Eberswalde
stellv. Vorsitzender:	Doz.Dr.sc. M. Altermann, Halle
Kommission I:	Dr. E. Vetterlein, Eberswalde
Kommission II:	Prof.Dr. D. Richter, Jena
Kommission III:	Doz.Dr.sc. W. Dunger
Kommission IV:	Prof.Dr. R. Metz, Berlin
Kommission V:	Prof.Dr. R. Schmidt, Eberswalde
Kommission VI:	Dr.sc. G. Schnurrbusch, Dölzig
Geschäftsführer:	Dr. W. Hierold, Eberswalde

Die Mitgliedervollversammlung beschloß außerdem, zum Zeitpunkt der Herstellung der Einheit Deutschlands die Arbeit der BG als beendet anzusehen. Alle bodenkundlich Interessierten wurden aufgefordert, dann die Mitgliedschaft in der Deutschen Bodenkundlichen Gesellschaft (DBG) zu beantragen bzw. zu reaktivieren. Bis zur Neuwahl im Jahre 1993 will der Vorstand der DBG den neu gewählten Vorstand der BG kooptieren, um ihm bei spezifischen Fragen eine Mitbestimmung zu ermöglichen.

Der Vorstand der BG möchte an die Stelle allen nationalen Gesellschaften, mit denen er in Kontakt gestanden hat, für die fruchtbare Zusammenarbeit danken und darum bitten, das gute Einvernehmen im Rahmen der DBG fortbestehen zu lassen.

All-Union Soil Science Society of USSR

A young scientists section has been created in the Society to facilitate young scientists contacts and information exchange. For any information on the section's activities, please apply to M.V. Machavariani, Soil Science Department, Georgian Agriculture Institute, Tbilisi 380031, Georgia, USSR; or A.B. Rozanov, Laboratory of Soil Geography, Institute of Geography, Staromonetny 29, Moscow 109017, USSR.

Life Membership of the ISSS.

Mr. J.J. AbuBockari, Sierra Leone
Mr. A.R. Adetumbi, RSU Salford-UK
Mr. R. Adiwiganda, Gent-Belgium
Dr. Go Ban Hong, Bogor, Indonesia
Prof.Dr. C.F. Bentley, Canada
Md. Mizanur Rahman Bhuiyan, Austria
Mr. H. Brammer, England
Dr. M. Bybordi, Plan & Budget Org.-Iran
Dr. P. Driessen, WAU-Netherlands
Prof.Dr. R. Dudal, KU Leuven-Belgium
Prof.Dr. M. Eaqub, Mymensingh-Bangladesh
Dr. H. Eswaran, SMSS-Washington
Dr. R.W. FitzPatrick, CSIRO-Australia
Dr. M.R. Goyal, CCA-Puerto Rico
Gunalan, Palembang, Indonesia
Dr. B.S. Gupta, Khatauli-India
I. Haque, ILCA, Ethiopia
Ch. Muhamed Altaf Hussain, Pakistan
Dr. V. Ignatieff, Canada
Mr. Y.P. Kalra, CFS-Canada
Dr. B.T. Kang, IITA, Nigeria
Prof.Dr. M.F.A. Khan, Karachi-Pakistan
J.K. Ladha, IRRI, Philippines
Dr. P. Louis, Ghent-Belgium
Dr. J. Lumbanraja, Lexington, USA
Dr. L. Maene, Paris, France
Dr. Cezar P. Mamaril, Bogor, Indonesia
Prof.Dr. C. Mathieu, ESAP, Toulouse-France
Ms. Caroline Mba, Nsukka-Nigeria
Dr. P.W. Mtakwa, Morogoro-Tanzania
Dr. P.K.R. Nair, Gainesville-USA
Prof.Dr. R. Nielsen, Davis, CA, USA
Mr. Celso Nóbrega, Brasilia-Brazil
Dr. A. Osman, ACSAD-Syria
Mr. Dhiraj Pal, Chicago-USA
Dr. P.G. Paredes Arce, Iquitos, Peru
Prof. W.L. Peters, Maracaibo, Venezuela
Mr. P. Pietrowicz, Münster-FRG
Dr. E.P. Pushparajah, IBSRAM-Thailand
J.C. Quirosa, La Paz-Bolivia
R. Rahman, Dhaka-University, Bangladesh
Dr. D.L.N. Rao, CSS, Karnal, India
Dr. M. Vikran Reddy, Kakatiya Univ., India
Dr. A. Remmelzwaal, Netherlands
Mr. J. Riquier, Villeneuve Loubet-France
Prof.Dr. A. Ruellan, France
J.S. Samra, CSSRI, Karnal, India
Dr. Racim Sant'Anna, FAO-Accra, Ghana
Dr. M.A. Sattar, Univ. Jyvaskyla-Finland
Dr. A.K. Singh, IARI, New Delhi, India
Dr. P. Smart, Glasgow Univ-UK
Dr. W.G. Sombroek, ISRIC-Netherlands
Mr. M.M. Striker, Gainesvilles-USA
Mr. J.H.V. van Baren, ISRIC-Netherlands
Mr. J.G. van Brandt, Kigali, Rwanda
Mr. C.A. van Diepen, SC-Netherlands
Mr. A.J. van Kekem, NSS Tanga-Tanzania
Dr. T. Wakatsuki, Shimane Univ.-Japan
Mr. Wen Ting-Tiang, Somalia
Mr. M.A. Yacoubi, ADB/NARD-Ivory Coast

APPOINTMENTS, HONOURS
NOMINATIONS, DISTINCTIONS
ERNENNUNGEN, AUSZEICHNUNGEN

Prof. **Boris G. Rozanov** of the Moscow State University was appointed as advisor to the Executive Director of UNEP and Coordinator of the Plan of Action to Combat Desertification with the responsibility, inter alia, of preparations for the United Nations Conference on Environment and Development, in June 1992 in Brazil.

Dr. **Francesco di Castri** has taken on a new challenge within Unesco, as Coordinator for Environmental Programmes, ensuring the overall coordination of all Unesco's activities in the field of the environment.

John Hennessy, a board director of Sir Alexander Gibb and Partners, has been elected as the new President of the International Commission on Irrigation and Drainage (ICID).

After their meeting on 13 July 1990, the ACP-EEC Committee of Ambassadors re-appointed Mr. **D. Assoumou Mba**, Director of the Technical Centre for Agricultural and Rural Cooperation (CTA), for a further period of five years.

Alberto Fujimori, a graduate agronomist, has been elected president of Peru in a runoff election in June. Fujimori, a graduate of the national Agrarian University in LaMolina, won the runoff with about 50% of the vote to his opponent's 40%. A virtual unknown five months before the election, he had attracted just 0.5% backing in an early poll. In the end, his backing came mostly from poor voters – especially rural voters who have felt slighted by past governments and who liked his 'agronomist' label. The son of Japanese immigrants, Fujimori was president of the Agrarian University from 1984 to 1989.

Dr. **Hubert Zandstra**, deputy director general for research at the International Rice Research Institute (IRRI), Philippines, has been selected as the new director general of the International Potato Center (CIP) in Lima, Peru.

The Supreme Council of the Russian Soviet Federal Socialist Republic of the USSR has awarded Prof. **Boris G. Rozanov** of the Moscow State University with the title of 'Honoured Worker of Science and Technology'. The Timiriasev's Agricultural Academy has awarded him with the honoured V.R. Williams' Prise.

Awards of the Soil Science Society of America:

John Witty, national leader for soil classification at the USDA National Soil Survey Center in Washington, DC, has received a Special Achievement Award. Dr. Witty was cited for his work on the soil survey staff's fourth edition of the 'Keys to Soil Taxonomy', published in 1990. The new edition contains a revised format to Keys to Subgroups, extracted from a computerized, up-to-date copy of the book.

Gary A. Peterson, professor of agronomy at Colorado State University and team leader of the Dryland Agroecosystem Project, has received the CIBA-GEIGY Award and the Soil Science Applied Research Award from the ASA and SSSA, respectively.

Surajit K. De Datta, principal scientist and leader of the Rainfed Lowland Rice Ecosystem Program of the International Rice Research Institute (IRRI)received ASA and SSSA Fellowships, an ASA International Service in Agronomy Award, and an SSSA International Soil Science Award.

Dr. **Parker Pratt**, Professor Emeritus of Soil Science at the University of California, Riverside, and former director of the U.S. Salinity Lab, has received the Bouyoucos Soil Science Distinguished Career Award.

Francis E. Clark has received the Soil Science Distinguished Service Award. He is a retired research microbiologist at USDA-ARS, Ft.Collins, CO. He holds B.A., B.D.E., and M.S. degrees from the University of Colorado.

James M. Tiedje, professor of soil microbiology at the Departments of Crop and Soil Sciences, and Microbiology at Michigan State University, and Director of the National Science Foundation Center for Microbial Ecology, has been awarded the Soil Science Research Award.

Mark L. Brusseau, who earned a Ph.D. degree from the University of Florida in 1989, has been awarded the Emil Truog Award.

John W. Schafer Jr., professor of agronomy and international agriculture at Iowa State University, received the Soil Science Education Award.

James D. Rhoades, director of the USDA-ARS Salinity Lab and adjunct professor of soil science at the University of California, Riverside, has been awarded the Soil Science Applied Research Award.

Nyle C. Brady, senior consultant for the United Nations Development Program, received the International Soil Science Award.

Thomas, E. Fenton, Iowa State University, **Donald P. Franzmeier**, Purdue University, **Robert J. Gilkes**, University of West Australia, **Murray B. McBride**, Cornell University, **Eldor A. Paul**, Michigan State University, **Samuel J. Smith**, USDA-ARS, **William F. Spencer**, USDA-ARS, **John W.B. Stewart**, University of Saskatchewan, **G. Clarke Topp**, Canada Dept. of Agriculture, and **Nico van Breemen**, Wageningen Agricultural University were named Fellow of the Soil Science Society of America.

Dr. **William R. Gill** received the 1990 John Deere Medal from the American Society of Agricultural Engineers for 'distinguished achievement in the application of science and art to the soil'.

Prof.Dr. **Marcel De Boodt**, State University of Ghent (Belgium), former chairman of ISSS Commission I, received in Warsaw on October 16, 1990, at the National Academy of Science, the Oczapowski Medal which is the highest Polish Reward for scientific contribution to agriculture.

John S. Niederhauser, a plant pathologist who has increased potato production tenfold in the food-poor countries of the world, has been awarded the 1990 World Food Prize.

R.L. Halstead, retired research scientist and administrator with Agriculture Canada, **C.A. Rowles,** Professor Emeritus of the University of British Columbia, and **C.R. DeKimpe,** research scientist, administrator and educator with Agriculture Canada, have been named fellows of the Canadian Society of Soil Science.

Dr. **Robert Van de Graaf** and Mr. **G. Blackburn** are awarded an Honorary Membership for Life of the Australian Society of Soil Science Inc.

Dr. **Kevin Tiller** of the CSIRO Division of Soils, has been awarded the J.A. Prescott Medal for his significant contribution to soil science in the area of micronutrients and environmental pollution.

IN MEMORIAM

Dr. Nikola Živanov (1931-1990)

Am 25.6.1990 starb unerwartet Dr. Nikola Živanov, wissenschaftlicher Rat am Institut für Pappelwirtschaft der Landwirtschaftlichen Fakultät der Universität Novi Sad. Nikola Živanov wurde 1931 in Karadjordjevo, Vojvodina (Serbien-Jugoslawien) geboren. 1959 schloß er das Studium der Forstwirtschaft in Sarajevo ab und setzte seine wissenschaftlichen Studien als Assistent für das Fach Bodenkunde an der Forstlichen Fakultät Sarajevo fort, und zwar bei Prof.Dr. M. Ćirić, bis er 1963 in das Institut für Pappelwirtschaft nach Novi Sad überwechselte. Dort arbeitete er bis zu seinem Lebensende, dort widmete er sich mit ganzer Kraft den fachlichen und wissenschaftlichen Aufgaben.

Seit 1963 arbeitet er an neuartigen, wegweisenden Untersuchungen der Böden mit Pappel und Weiden und dies mit glänzendem Erfolg. Er besaß eine große Energie und setzte sich mit ganzer Kraft dafür ein, die entsprechenden und besten Bodentypen für Weide und Pappel zu entdecken, neue Möglichkeiten und Erkenntnisse zu gewinnen.

1976 promovierte er an der Forstlichen Fakultät in Sarajevo bei Prof.Dr. M. Ćirić. Als Mitarbeiter in zahlreichen wissenschaftlichen Institutionen im In- und Ausland nahm er an vielen bedeutenden bodenkundlichen Kongressen teil, besonders an internationale bodenkundlichen Symposien. Er verfaßte mehr als 50 wissenschaftliche Arbeiten über die Zusammenhänge der Böden mit Pappel und Weide, und er gilt als einer der besten Kenner auf diesem Gebiet im In- und Ausland.

Nikola Živanov beindruckte durch sein heiteres Wesen, und sein Optimismus half allen, die ihn kannten.

Zu früh ist er von uns gegangen. Wir werden ihn sehr vermissen.

Prof.Dr. Ivan Vukorep, Sarajevo, Jugoslawien

Albert Thomas Halm (1930-1989)

Mr. Albert Thomas Halm, Director of Soil Research Institute of Ghana, Chairman of the Regional Coordination Unit of the Soil Fertilizer Network for Africa, died on 13th December 1989.

Mr. A.T. Halm was born on 15th November 1930 in Accra. After his formal education at Achimota College, he studied agricultural science at the University College of North Wales, Bangor in U.K. and pursued a post graduate course in Soil Chemistry and Fertility at the University of Illinois, USA.

Mr. A.T. Halm joined the Soil Research Institute in 1963 as a Research Officer. He was promoted to the status of Senior Research Officer in 1968 after his intensive studies on Soil Chemistry and Fertility studies on rice and maize in various ecological zones of Ghana. He was appointed FAO counterpart soil chemist on the project 'Increased Farm Production through Fertilizer Use; from 1968-1976. He was promoted to the status of Principal Research Officer in 1974 and Chief Research Officer in 1980. Mr. Halm was appointed Acting Director of the Soil Research Institute in 1980, and substantive Director in 1985. His major research work was on 'Nuclear Techniques in the Development of Fertilizer Practices for Multiple Cropping'. Mr. Halm had an impressive list of publications to his credit. He left behind a widow and four children.

R. Sant'Anna, Accra, Ghana

Dr. John Kinyala Samki (1941-1990)

The sudden and untimely death of Dr. John Kinyala Samki on 21 July, 1990 was a source of deep shock and sadness to all who knew him. His illustrious career as a soil scientist spanned many parts of the globe, from New Zealand to Europe, from China to India and America and of course in Africa and especially in his beloved Tanzania where he was Director of the Agriculture Research Institute at Mlingano for many years. Since 1985, Dr. John Kinyala Samki was a key figure in one of the most important SADCC Programmes – the Food Security Programme. It was no coincidence that the project of which he was part, and coordinated during its early stages, the Regional Inventory of Agricultural Resource Base (RIARB), became quickly established and appreciated in every member country of the SADCC. The number of colleagues and friends, among whom John had gained respect, was truly amazing and ensured the success of his work and that of the project everywhere. The very special welcome which John and the project staff received in Tanzania and especially Mlingano, where he was Director for many years, was the greatest testimony of the very high esteem in which he was held. John's tireless work and commitment to the ideals of the SADCC were totally above any personal considerations and continued right up until his last day when he insisted that all arrangements proceed as planned. He was making amendments to the country components of the SADCC Soil Legend before circulating the first draft of the final version to all SADCC member states. Sadly he departed this life before he could enjoy the results of his virtually finalized labours. His legacy of selfless devotion to duty coupled with an engaging manner must remain as a shining inspiration to all who knew him. We offer his family our deepest sympathy on their sad and untimely bereavement.

M. Walsh (RIARB)

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

Meetings etc. marked with *, are organized or (co)-sponsored by ISSS, implying that participation with support from the ISSS Fellows Fund can be considered (for details on the Fund see page 76 of Bulletin 75).

ISSS, as an associate member of the International Council of Scientific Unions, subscribes to the principle of free movement of bona fide scientists; patronage or sponsoring will therefore automatically be withdrawn if the country of venue denies or purposely delays visa awarding to any ISSS member who wishes to participate in the meeting concerned.

Les réunions, etc., marquées d'un astérisque (*) sont organisées ou (co)-financées par l'AISS, ce qui implique qu'il y a possibilité d'y participer avec un financement du Fond pour Aspirants de l'AISS (voir détails page 76 du Bulletin 75).

Tagungen usw, versehen mit (*) werden organisiert bzw (mit)finanziert von der IBG, was bedeutet dass die Möglichkeit gegeben ist sich zu beteiligen mit finanzielle Unterstützung aus der IBG Stipendien (für Einzelheiten siehe Seite 76, Mitteilungsblatt no. 75).

Las reuniones, etc. marcadas con un asterisco (*) son organizadas o (co)-promovidas por la SICS, implicando la posibilidad de participar con el apoyo del Fondo para becarios de la SICS (ver detalles, p.76 del Boletin No.75).

1991

Seminar on Growth and Water Use of Forestry Plantations, Bangalore, India, February 5-7, 1991.
Information: Mr. M.H. Swaminath, Karnataka Forest Dept., Aranya Bhavan, 18th Cross, Malleswaram, Bangalore 560 003, Karnataka, India.

INSAN 4th International Permaculture Conference, Kathmandu, Nepal, February 10-15, 1991.
Information: INSAN, GPO Box 1991, Kathmandu, Nepal. (fax: +977 1 524509; telex: 2439 icimod np).

GIS '91: Applications in a Changing World, Vancouver, Canada, February 12-15, 1991
Information: GIS '91, Symposium Office, 720-845 Cambie Street, Vancouver, B.C., Canada V6B, 4Z9. (fax: +1 604 688-1573)

International Workshop on Soil Water Balance in the Sudano-Sahelian Zone, Niamey, Niger, February 18-22, 1991.
Information: Dr. M.V.K. Sivakumar, Principal Agroclimatologist, ICRISAT Sahelian Center, B.P. 12404, Niamey, Niger (telex icrisat 5406 ni; fax 73-43-29).

International Workshop on Conservation Farming Policies of Hillslopes for the Development and Sustainability of Natural Resources. Solo, Indonesia, March 8-15,1991.
Information: Dwiatmo Siswomartono, MKTI Organizing Committee Secretary, UACP Secretariat, Gedung Perikanan, Lantai I, J.L. Salemba Raya 16, Jakarta 10430, Indonesia. (fax: +62.21-5202502)

2nd Soil Residue Analysis Workshop, Lausanne, Switzerland, March 11-13, 1991.
Information: Prof.Dr. Joseph Tarradellas, IGE-EPFL, 1015 Lausanne, Switzerland. (fax: +41 21.693.27.27)

EKOS '91, Prague, Czechoslovakia, March 11-13, 1991.
Information: Institute of Scientific and Technical Information for Agriculture, Dept. of International Cooperation, Slezská Street 7, 120 56 Praha 2, Czechoslovakia. (fax: +42 2-257090; telex: 121295).

International Conference on Environmental Implications of Construction with Waste Materials, Maastricht, The Netherlands, March 24-28, 1991.
Information: International Conference WASCON'91, P.O. Box 1558, 6501 BN Nijmegen, The Netherlands.

Regional Symposium on Fertilizer Use and Crop Production in Sub-saharan Africa, Harare, Zimbabwe, March 26-28, 1991.
Information: International Fertilizer Industry Association, 28 rue Marbeuf, 75008 Paris, France. (fax: +33 1 42252408; telex: 640481 f).

International Symposium on the Role of Sulphur, Magnesium, and the Micronutrients in Balanced Plant Nutrition, Chengdu, P.R. of China, April 3-10, 1991.
Information: Dr. Sam Portch, PPI/PPIC, Hong Kong through fax: +852 868-4746, or telex: 67795.

International Seminar on Photogrammetry and Geographic Information Systems, Zürich, Switzerland, April 8-12, 1991.
Information: Secretariat Photogrammetry/GIS, Geographisches Institut, Universität Zürich, Winterthurerstrasse 190, CH-8057 Zürich (fax 41-1-362-5227).

Meeting on The Changing Face of Fenlands and the Implication for their Future Use, (British SSS and IPS), Cambridge, UK, April 9-11, 1991.
Information: Mr. Rodney Burton, SSLRC, Silsoe, Beds MK45 4DT, UK.

International Conference on Environmental Pollution, Lisboa, Portugal, April 15-19, 1991. European Centre for Pollution Research, UNEP and Unesco co-sponsoring.
Information: ICEP Conference Office, ICTR Secretariat, 11-12 Pall Mall, London SW1Y 5LU, U.K. (telex 925312 reico g; fax 01-976-1587).

23rd Congress of the International Association of Hydrogeologists (IAH), with symposium on Groundwater Overexploitation, Canary Islands, Spain, April 15-19, 1991.
Information: Lucila Candela, Escuela de Caminos, 31 Jordi Girona Salgado, Barcelona 08034, Spain

International Symposium on Effects of Atmospheric Pollutants on Climate and Vegetation, Taormina, Italy, April 18-20, 1991.
Information: Organizing Secretariat, Melograno Congressi, Via Luigi Pulci 44, 00162 Roma, Italy. (fax: +39 6-429-204; telex: 612142 sichim i).

4th International Rangeland Congress, Montpellier, France, April 22-26, 1991.
Information: Société internationale de congrès et services, 10 rue Charles-Amans, F-34000 Montpellier, France.

International Workshop on Conservation and Sustainable Development, Khao Yai National Park, Thailand, April 22-26, 1991.
Information: Dr. Apisit Eiumnoh, Interdisciplinary Natural Resources Developent and Management, Asian Institute of Technology, GPO Box 2754, Bangkok 10501, Thailand. (fax: +66 2 5290374, telex: 84276 th).

Environment and the Poor: Soil and Water Management for Sustainable Smallholder Production. Kenya/Tanzania, April 28-May 8, 1991.
Information: R.J. Cheatle, P.O. Box 44391, Nairobi, Kenya.

8th Thematic Conference on Geologic Remote Sensing, Exploration, Engineering and Environment, Denver, Colorado, USA, April 29-May 2, 1991.
Information: Nancy J. Wallman: ERIM/Thematic Conferences, P.O.Box 8618, Ann Arbor, MI 48107-8616, USA. Fax: (313)994-0944.

International Symposium on Tropical Peat, Sarawak, Malaysia, May 6-10, 1991.
Information: The Secretary, Organizing Committee, Int. Symp. on Tropical Peat Land, c/o Soil Science Unit, MARDI, G.P.O. Box 12301, 50774 Kuala Lumpur, Malaysia (fax +60 3 948 3664; telex ma 37115).

4th International Symposium on Land Subsidence, Houston, Texas, USA, May 12-18, 1991.
Information: Ivan Johnson, Chairman FISOLS, A. Ivan Johnson Inc., 7474 Upham Court, Arvada CO 80003, USA.

7th World Congress on Water Resources – 'Water for Sustainable Development in the 21st Century', Rabat, Morocco, May 13-18, 1991. (International Water Resources Association -IWRA)
Information: 7th IWRA Congress Secretariat, Administration de l'Hydraulique, Direction de la Recherche et de la Planification de l'Eau, Rue Hassan Benchekroun, Agdal-Rabat, Morocco.

1st European Symposium on Terrestrial Ecosystems. Forests and Woodlands. Florence, Italy, May 20-24, 1991.
Information: ICARIA, Via Zannoni, 45, 40134 Bologna, Italy. *or:* A . Teller, European Science Foundation, C/o C.E.C. DG XII-E, 200 rue de la Loi, 1049 Brussels, Belgium.

International MAB Workshop on Phosphorous Dynamics and Retention in Ecotones of Temperate Lowland rivers and Lakes. Mikolajki, Poland, May 20-26, 1991.
Information: A. Hillbricht Ilkowska, Institute of Ecology, Polish Academy of Sciences, 05-092 Lomianki, Poland.

24th International Symposium on Remote Sensing of Environment. Rio de Janeiro, Brazil, May 27-31, 1991.
Information: Alan K. Parker, Chairman 24th ISRSE, P.O.Box 8618, Ann Arbor MI 48107-8618, U.S.A.

17th Pacific Science Congress, Honolulu, Hawaii, May 27-June 2, 1991, including a symposium on global environmental change in the Pacific.
Information: R.W. Grigg and F.R. Mackenzie, Organizing Committee, 2424 Maile Way, Fourth Floor, Honolulu, HI 96822, U.S.A.

Satellite Symposium on Forest Decline in the Atlantic and Pacific Region, June 2-6, 1991.
Information: Dept. of Botany, University of Hawaii at Manoa, 3190 Maile Way, Honolulu HI 96822, USA.

4th International Workshop on Chemical, Biological, and Ecotoxicological Behaviour of Pesticides in the Soil Environment, Rome, Italy, May 29-31, 1991.
Information: Dr. A. Piccolo, Istituto per lo Studio del Suolo, Piazza M. D'Azeglio 30, 50121 Firenze, Italy. (fax: +39 55-241485).

*** International Symposium on Soil Crusting: Physical and Chemical Processes**, Athens, Georgia, USA, May 30-June 1, 1991.
Information: Ms. Amy Stewart, Georgia Center for Continuing Education, Room 279 Georgia Center, University of Georgia, Athens, GA 30602, USA.

International Workshop on Landscape Dynamics in European Areas, Kiev, USSR, June 3-7, 1991.
Information: Valery P. Kukhar, Ukraine MAB Committee, Academy of Science of the Ukrainian SSR, 54 Vladimirskaya St., 252 601 Kiev 30, Ukraine SSR.

Regional Conference on Agroforestry Research and Development in the Miombo Ecozone of Southern Africa, Blantyre, Malawi, June 16-22, 1991.
Information: Dr. J.A. Maghembe, Regional Conference Secretariat, SADCC/ICRAF Agroforestry Project, P.O. Box 134, Zomba, Malawi. telex: 44017 mi.

History of Agriculture and the Environment: A Symposium on National Archives Building, Washington D.C., USA, June 19-22, 1991.
Information: Douglas Helm, Soil Conservation Service, P.O.Box 2890, Washington, D.C. 20013, USA.

***12th Conference of the International Soil Tillage Research Organization (ISTRO)**, IITA, Ibadan, Nigeria, July 8-12, 1991.
Information: Dr. R. Lal, Dept. of Agronomy, 2021 Coffey Road, The Ohio State University, Columbus, Ohio 43210-1086, U.S.A.

6th International Symposium on Iron Nutrition and Interactions in Plants, Logan, Utah, USA, July 14-19, 1991.
Information: Arthur Wallace, Gen. Secr. of Iron Symposium, Lab. of Biomedical & Environmental Sciences, University of California, 900 Veteran Avenue, Los Angeles CA 90024-1786, USA.

23rd Brazilian Soil Science Congress, Porto Alegre, Brazil, July 21-27, 1991.
Information: Secretaria Executiva, Faculdade de Agronomia/UFRGS, Depto. de Solos, Caixa Postal 776, Av. Bento Gonçalves 7712, 90001 Porto Alegre RS, Brazil.

8th International meeting of the International Quaternary Association (INQUA), Beijing, China, August 2-9, 1991. Symposium on Paleopedological Research (WG Paleopedology)
Information: Prof. B.T. Bunting and M.K. Woo, Dept. of Geography, McMaster University, Hamilton, Ontario, Canada L8S 4K1

13th Congress of the International Union for Quaternary Research (INQUA), Beijing, China, August 2-9, 1991.
Information: Dr. Ch. Schluchter, Engineering Geology, ETH-Hönggerberg, Ch-8093 Zürich, Switzerland.

3rd Conference of the International Federation of Classification Societies, Edinburgh, Scotland, August 6-9, 1991.
Information: IFCS-91 Organizing Committee, Conference Centre, Heriot-Watt University, Edinburgh EH14 4AS, Scotland.

20th General Assembly of the International Union of Geodesy and Geophysics, with symposia and workshops by the International Association of Hydrological Sciences (IAHS), such as 'Hydrological Basis of Ecologically Sound Management of Soil and Groundwater' and 'Hydrological Interactions between Atmosphere, Soil and Vegetation', Vienna, Austria, August 11-24, 1991.
Information: Dr. F. Nobilis, BM für Land- und Forstwirtschaft, Hydrographisches Zentralbüro, Marxergasse 2, A-1030 Vienna, Austria; *or:* Mr. H.J. Colenbrander, Secretary-general IAHS, P.O. Box 297, 2501 BD The Hague, The Netherlands.

International Workshop on Clay Swelling and Expansive Soils, Ithaca, NY, USA, August 12-16, 1991.
Information: Philippe Baveye, Cornell University, Dept. of Soil, Crop & Atmospheric Sciences, Bradfield and Emerson Halls, Ithaca, New York 14853. Fax: (607)255-2106.

Workshop on Denudation Processes and Land-Use Problems in Tropical Region. Nairobi, Kenya, August 12-22, 1991.
Information: Dr. C. Nyamweru, Dept. of Geography, Kenyatta University, P.O. Box 43844, Nairobi, Kenya.

10th International Symposium 'Humus et Planta', Prague, Czechoslovakia, August 19-24, 1991
Information: Symposium Secretariate Dr. Jaromír Kubát, Chairman of the Organizing Committee, Research Institute of Crop Production, 161 00 Prague-Ruzyn, Czechoslovakia.

2nd International Symposium on Soil Testing and Plant Analysis in the Global Community, Orlando, Florida USA, August 22-27, 1991.
Information: Council on Soil Testing and Plant Analysis, Georgia University Station, P.O. Box 2007, Athens, GA 306012-0007, U.S.A. (fax 404-548-4891).

21st International Conference of Agricultural Economists, Tokyo, Japan, August 22-29, 1991.
Information: XXI ICAE Secretariat, c/o International Communications Inc., Kasho Bldg. 2F, 2-14-9, Nihombashi, Chuo-ku, Tokyo 103, Japan (telex 222-3585 ics j; fax 3-273-2445).

24th General Assembly of the International Union of Biological Sciences, and Associated Symposia, Amsterdam, the Netherlands, September 1-7, 1991.
Information: IUBS Secretariat, 51 bd de Montmorency, 75016 Paris, France.

International Symposium on Environmental Control and Resources Development in China's Loess Plateau Region, Beijing, China, September 1-15, 1991.
Information: Gao Liuqing and Zheng Hongying, ISLPR, P.O. Box 767, Beijing 100101, China

National Conference of the Romanian Society of Soil Science, on the theme 'The ecological management of the Danube Delta', September 2-8, 1991.
Information: Dr. C.I. Răuță, President of the Romanian Society of Soil Science, RISSAC, Bd. Mărăști 61, 71331 Bucureti, Romania

International Symposium on Food and Nutrition in the Tropical Forest: Biocultural Interactions and Applications to Development, Paris, France, September 10-13, 1991.
Information: C.M. Hladik, CNRS Laboratoire d'Ecologie Générale, 4 avenue du Petit Château, 91800 Brunoy, France.

***International Workshop on Evaluation for Sustainable Land Management in the Developing World**, Chiang Rai, Thailand, September 15-21, 1991. (DLD, IBSRAM, ISSS-WG/LI)
Information: Dr. Marc Latham, Secretary International Workshop on Sustainable Land Management, c/o IBSRAM, P.O. Box 9-109, Bangkok 10900, Thailand. telex 21505 ibsram th; fax *66-2-5611230*

International Symposium on Environmental Geochemistry, Uppsala, Sweden, September 16-19, 1991.
Information: Dr. Mats Olsson, Dept. of Forest Soils, Swedish University of Agricultural Sciences, Box 7001, S-750 07 Uppsala, Sweden.

10th World Forestry Congress of FAO, Paris, France, September 17-26, 1991.
Information: M. Jean Gadant, Centre Technique Forestier Tropical, 45bis Avenue de la Belle Gabrielle, 94736 Nogent-sur-Marne Cedex, France (telex: cetefo 264 653 f; fax: 1-43-94-44-96) *or:* M. Michel Khouzami, FAO, Dépt. des Forêts, Via delle Terme di Caracalla, 00100 Rome, Italie (telex 610 181 fao-i; fax: 39-6-51-41-368)

1st European Meeting on Rational Fertilization, Strasbourg, France, September 26-27, 1991.
Information: Secrétariat COMIFER, Station ITCF, 91720 Boigneville, France. (fax: +33 1-64-99-33-30).

14th International Conference on Plant Growth Substances, Beijing, September 1991.
Information: Dr. J.H. Hulse, CASAFA, 1628 Featherston Drive, Ottawa, Ontario, Canada K1H 6P2.

Japan-US Symposium on Snow Avalanche, Landslides, Debris Flow Prediction and Control, Tsukuba City, Japan, September 30-October 2, 1991.
Information: Masaki Tominaga, Secretary JUSSLDPC 1991, National Research Institute for Earth Science and Disaster Prevention, Science & Technology Agency, 1 Tennodai-3, Tsukuba, Ibaraki 305, Japan. (fax: +81 298 51-1622).

International Hydrology and Water Resources Symposium 1991, Perth, Australia, October 2-4, 1991.
Information: The Conference Manager, International Hydrology and Water Resources Symposium 1991, The Institution of Engineers, Australia, 11 National Circuit, Barton ACT 2600, Australia. (fax: +61 6 270-6530).

***1er Simposio Internacional Uso y Manejo de Suelos Volcánicos Endurecídos**, Montecillo, México, Octubre 21-26, 1991.
Información: Héctor M. Arias Rojo, Centro de Edafología, Colegio de Postgraduados, Km 34, Carretera México-Texcoco, 56230 Montecillo, Edo. de Méx., México. (fax 52-595-45723).

1st International Symposium on Global Warming and Human Health, Khartoum, Sudan, November 1991.
Information: Prof.Dr. Moneim Attia, IHSRC, P.O. Box 2020, Khartoum, Sudan.

***2nd African Soil Science Society Conference** 'Soils and Water Management for Sustainable Productivity', Cairo, Egypt, November 4-10, 1991.
Information: Prof.Dr. A.M. Elgala, Chairman of the Organizing Committee, Dept. of Soil Science, Faculty of Agriculture, Ain Shams University, Shobra El-Khaima, Cairo, Egypt (telex 94070 ushms un).

8th ICID Afro-Asian Regional Conference on 'Land and Water Management in Afro-Asian Countries', Bangkok, Thailand, November 18-29, 1991.
Information: Organizing Committee for the 8th Afro-Asian Regional Conference of ICID, c/o Mr. M. Poolsup, Royal Irrigation Dept., Samsen Road, Bangkok 10300, Thailand. (fax: +66 2 2430966; telex: 72307 deproir th)

***International Workshop on Methods of Research on Soil Structure/Soil Biota Interrelationships**, Wageningen, the Netherlands, 25-28 November 1991.
Information: Mrs. L. Hotke-Staal, IAC-SOCC, P.O. Box 88, 6700 AB Wageningen, The Netherlands. (fax: +31 8370-18552; telex 45888 intas nl)

International Symposium on Modeling in Agricultural Research in Developing Countries: Systems Approaches for Agricultural Development; Bangkok, Thailand, November 1991.
Information: Dr. F.W.T. Penning de Vries or Dr. P.S. Teng, IRRI, P.O. Box 933, 1099 Manila, Philippines.

IGU Seminar on Monitoring Geosystems Perspectives for the 21st Century, Delhi, India, December 6-13, 1991
Information: Dr. R.B. Singh, Member IGU Commission, Dept. of Geography, University of Delhi, Delhi 110 007, India.

1992

International Symposium on Nutrient Management for Sustained Productivity, Ludhiana, India, February 10-12, 1992.
Information: Dr. N.S. Pasricha, Symposium Organising Secretary, Dept. of Soils, Punjab Agricultural University, Ludhiana 141 004, India. (telex: 386-473 coae in).

***International Symposium on Strategies for Utilizing Salt-Affected Lands**, (Subcommission A with Agricultural Science Society ofThailand), Bangkok, Thailand, February 17-25, 1992.
Information: Prof.Dr. I. Szabolcs, RISSA, Herman Otto u. 15, 1022 Budapest, Hungary

1st International Congress on Current Facets in Crops Research, Hisar, India, February 26-18, 1992.
Information: Dr. Ved Pal Singh, Organising Secretary, CFCR, c/o ARIC, 49, Priti Nagar, Hisar-125001, India.

8th International Palynological Congress, Aix-en-Provence, France, early 1992.
Information: Prof. G. Nicolis, Secretary IUBS, Faculté des Sciences, Université Libre de Bruxelles, Campus Plaine, C.P. 226, 1050 Bruxelles, Belgium.

National Soils Conference on Soil Protection and Productivity, Adelaide, Australia, April 19-23, 1992
Information: Mr. Richard Merry, ASSSI Conference Committee, CSIRO Division of Soils, Private Bag No.2, P.O. Glen Osmond, S.A. 5064, Australia.

International Symposium on Erosion on Farming Lands in Temperate Plains Environments, Saint-Cloud, Paris, May 25-29, 1992.
Information: Stanislas Wicherek, Ecole Normale Supérieure de Fontenay-St.Cloud, Biogeography and Ecology Center, Avenue de la Grille d'Honneur, Le Parc, 92211 Saint-Cloud, France. (fax: +33 1.46.02.39.11; telex: 206937 ensclou f).

International Conference on Soil Compaction and Soil Management, Tallinn, Estonia, USSR, June 8-12, 1992.
Information: Dr. Tech.Sci. E.J. Nugis, Conference Chairman, Nature Conservation Engineering Centre, Laari 5, 200031 Tallinn, Estonia, USSR.

2nd United Nations Conference on Environment and Development (UNCED), Rio de Janeiro, Brazil, June 1992. (With a parallel NGO 'Congress of the Peoples of the Earth).
Information: Dr. Maurice Strong, Secretary-General UNCED, 160 route de Florissant, C.P.80, CH-1231 Conches, Geneva, Switzerland.

International Symposium on Erosion, Debris Flows and Environment in Mountain Regions, Chengdu, China, July 5-9, 1992.
Information: Dr. Shang Xiangchao, Institute of Mountain Disasters & Environment, Chinese Academy of Sciences, Chengdu P.O. Box 417, Sichuan 610015, P.R. of China. (fax: +86 28-582846; telex: 600321 sicd cn).

***9th International Working Meeting on Soil Micromorphology**, Townswille, Australia, July 12-18, 1992. (Subcommission B).
Information: Dr. C.J. Chartres, CSIRO Division of Soils, GPO Box 639, Canberra ACT 2601, Australia.

1st International Crop Science Congress, Ames, USA, July 14-22, 1992.
*Information:*Kenneth Frey, Chair, International Crop Science Congress, c/o Agronomy Dept., Iowa State University, Ames, IA 50011, USA.

27th International Geographical Congress, Washington, USA, August 9-14, 1992
Information: A.R. De Souza, Secretary-General Int. Geog. Congress, 1143 17th Street N.W., Washington DC 20036, U.S.A.

***11th International Colloquium on Soil Zoology**, Jyväskylä, Finland, August 10-14, 1992 (ISSS Subcommission D).
Information: Jyväskylä Congresses, Seminaarinkatu 15, SF-40100 Jyväskylä, Finland. (fax: +358 41 603621).

8th International Colloquium on Apterygota, Helsinki, Finland, August 17-20, 1992.
Information: Pekka Vilkamaa, Museum of Zoology, University of Helsinki, P.-Rautatiekatu 13, SF-00100 Helsinki, Finland.

International Symposium on Erosion and Sediment Transport Monitoring Programmes in River Basins, Oslo, Norway, August 24-28, 1992
Information: Symposium Secretariat, Hydrology Dept., Norwegian Water Resources and Energy Administration, P.O. Box 5091, Majorstua, N-0301 Oslo 3, Norway. (fax: +47 2 959 000; telex 79 397 nveo n).

29th International Geological Congress, Kyoto, Japan, August 24-September 3, 1992.
Information: Dr. T. Sato, Inst. of Geoscience, The University of Tsukuba, Ibaraki 305, Japan.

***1st Meeting of the ISSS Working Group on Pedometrics,** Conference on spatial statistics in soil science, Wageningen, the Netherlands, August 31-September 4, 1992.
Information: Dr. J. de Gruijter, Winand Staring Centre, Postbus 125, 6700 AC Wageningen, the Netherlands. (fax: +31 8370-24812).

***European Conference on Integrated Research for Soil and Sediment Protection (EUROSOL),** Maastricht, the Netherlands, September 6-12, 1992.
Information: Dr. H. Eijsackers, Programme Director, Netherlands Programme on Integrated Soil Research, P.O. Box 37, 6700 AA Wageningen, the Netherlands. (fax (0)8370-82419).

***7th International International Soil Conservation Conference (ISCO),** September 1992.
Information: Geoff Cunningham, Soil Conservation Service of NSW, P.O. Box 198, Chatswood, NSW 2057, Australia.

***International Symposium on Soil Resilience and Sustainable Land Use**, Budapest, September-October, 1992. (ISSS Commission VI).
Information: Prof.Dr. I. Szabolcs, c/o RISSAC, Hungarian Academy of Sciences, P.O.Box 35, H-1525 Budapest, Hungary. (fax: +36 1 155-8839).

1993

***10th International Clay Conference,** Adelaide, Australia, July 18-25, 1993. (ISSS Commission VII)
Information: R.W. Fitzpatrick, CSIRO, Division of Soils, Private Bag No.2, P.O. Glen Osmond, SA 5064, Australia.

***International Workshop on Classification and Management of Desert Soils**, Wulumuqi, China, August 8-20, 1993.
Information: Dr. Gong Zitong, Institute of Soil Science, Academia Sinica, P.O. Box 821, Nanjing 210008, P.R. of China. (fax: +86 25-712663; telex: 34025 issas cn).

3rd International Conference on Geomorphology, Hamilton, Canada, August 23-29, 1993.
Information: 3rd International Conference on Geomorphology, McMaster University, Hamilton, Ontario, Canada L8S 4K1. (fax: +1 416 546-0463; telex: 061 8347).

15th International Congress on Irrigation and Drainage, The Hague, the Netherlands, September 6-12, 1993.
Information: Netherlands National Committee ICID, attn. E. Schultz, P.O. Box 600, 8200 AP Lelystad, the Netherlands. (fax: +31 3200 34300; telex: 40115 flevo nl).

12th International Plant Nutrition Colloquium, Perth, Australia, September 21-26, 1993.
Information: Plant Nutrition Secretariat, The Conference Office, The University of Western Australia, Nedlands WA 6009, Australia. (fax: +61 9-382-2029).

NEW PUBLICATIONS
NOUVELLES PUBLICATIONS
NEUE VERöFFENTLICHUNGEN

Titles of new publications are listed here for information. Orders can not be handled by the ISSS Secretariat but should be placed through a bookstore or directly with the publishers. Nearly all publications mentioned can however be viewed at the office of the Deputy Secretary-General of the Society, the International Soil Reference and Information Centre (ISRIC) in Wageningen, the Netherlands.

Les titres de nouvelles publications sont mentionnés à titre d'information. Veuillez adresser vos commandes non pas au Secrétariat de l'AISS, mais à une librairie ou directement aux éditeurs. Presque toutes les publications mentionnées peuvent être consultées au bureau du Secrétaire-Général Adjoint de l'AISS, Centre International de Référence et d'Information Pédologique (ISRIC) à Wageningen, Pays-Bas.

Die Titel neuer Veröffentlichungen sind hier zu Information angeführt. Bitte richten Sie Ihre Bestellungen nicht an das IBG Sekretariat sondern an den Buchhandel oder direkt an die Verlage. Fast alle Veröffentlichungen sind jedoch zu besichtingen an den Geschäftsraum des Stellv. Generalsekretärs der IBG, Internationales Bodenreferenz und Informations Zentrum (ISRIC) im Wageningen, Holland.

Los titulos de nuevas publicaciones son citados para su información. Las pedidas deben ser dirigidas a través de una librería o directamente al editorial. Sin embargo casi todas las publicaciones mencionadas pueden ser consultadas en la oficina del vicesecretario general de la SICS en el Centro Internacional de Referencia e Información de Suelos en Wageningen, Holanda.

Transactions 14th International congress of Soil Science, Kyoto Japan, August 12-18, 1990. 8 volumes. M. Koshino, M. Morooka, T. Morishita, N. Owa, Y. Harada, T. Yoneyama, and Y. Ozaki, Publ. Committee. International Society of Soil Science, 1990, about 3500p.

These transactions consist of 8 volumes, one of which includes the plenary papers, contents and authors index, and others, volumes I to VII, correspond to Commissions I to VII. Volume VII also includes the contributions from the 4 Subcommissions. Each volume is sub-divided in parts with oral presentations (symposia) and the related poster presentations. This wealth of up-to-date information is available for a very reasonable price!

Also published were: Proceedings of Symposium on Maximum Yield Research, A Satellite Symposium of the 14th International Congress of Soil Science (15 papers, 152p.) and Advances in Soils and Fertilizers in Japan, 14th ICSS Exhibition by Prefectural Institutions (139p.).

Price of the Transaction set: Yen 15,000, plus Yen 5,000 postage.

Orders to: Mrs. Chieko Ohba, Secretariat 14th ICSS, 6-26-10-202 Hongo, Bunkyo-ku, Tokyo 113, Japan; or: ISRIC, P.O. Box 353, 6700 AJ Wageningen, Netherlands.

Forest Soils and Modern Forest Management. Bo-Qun Lin. Publishing House of Northeast Forestry University, Harbin, 1990, 479p. ISBN 7-81008-134-9.

This publication contains the papers presented at the First International Symposium on Forest Soils, held in Harbin, Peoples Republic of China, July 1990. It was a satellite meeting of the 14th International Congress of Soil Science. The meeting was attended by over 120 scientists from more than 20 countries. This proceedings contains 89 papers, covering various fields of forest soil science, such as Relationships between forest soils and tree growth; Forest fertilization and tree nutrients; Sol characteristic and forest management; forest soil pollution, forest soil utilization and improvement; Forest soils study method; and Development and prospects of forest soil science.

Orders to: Prof. Bo-Qun Lin, Northeast Forestry University, Box 317, Harbin 150040, P.R. of China.

Soil Fertility, Soil Tilth and Post-Clearing Land Degradation in the Humid Tropics. Proceedings meeting ISSS Comm. IV and VI, Ibadan, July 1985. R.A. Sobulo and E.J. Udo, editors. Soil Science Society of Nigeria, Ibadan, n.y., 385p.

In order to meet the increasing food and fibre demands of the teeming population of the humid tropics, it has become necessary to go into large scale intensive mechanized farming in place of the traditional fallow system. The establishment of these farms involves clearing large areas for the cultivation of crops. The experience in the humid tropics with harsh climatic conditions has shown that the practice has often led to rapid loss of topsoil, degradation of soil structure and sharp decline in soil fertility and productivity. In order to minimize these problems, particular attention has to be paid to land clearing and post-clearing management of these fragile tropical soils.

It was in recognition of these problems in the humid tropics that the International Society of Soil Science at its 12th International Congress held in India, 1982, mandated Nigeria through the Soil Science Society of Nigeria to host an International Conference that would put together current information on the management of tropical soils, and provide a forum for the sharing of experiences among soil scientists from diverse humid tropical environments.

The conference was attended by over 100 participants from different parts of the world. These proceedings contain 30 selected papers presented, grouped under four sections: land clearing and tillage operations; soil chemistry and mineralogy; soil testing and fertilizer use; and cropping system and land degradation.

This report gives a good coverage of the physical, chemical and biological nature of humid and subhumid tropical soils and how best manage them for high productivity.

Orders to: Soil Science Society of Nigeria, c/o NIFOR, PMB 1030, Benin City, Nigeria.

Earthworms in Waste and Environmental Management. C.A. Edwards and E.F. Neuhauser. SPB Academic Publishing, The Hague, 1988, viii + 392p. ISBN 90-5103-017-7.

More than 100 years have passed since Charles Darwin wrote his book (1881) 'The Formation of Vegetable Mould Through the Action of Worms' which was the sequel to 40 years of careful personal observations of the activities of earthworms. Prior to this, many scientists and laymen considered earthworms to be pests and few appreciated their contribution to soil formation and fertility. He established the importance of these animals in the maintenance of fertility, demonstrated how much soil they turn over, and aroused the interests of many scientists in their habits and role in soil. Nevertheless, our knowledge of these ubiquitous animals progressed only slowly over the following 60 years, and it was not until after the Second World War, when Soil Zoology first came into its own, at the first International Conference which was held in the University of Nottingham, U.K. in 1955, that earthworm research began to increase again. Thereafter, the regular International Soil Zoology conferences encouraged as strong interest in soil-inhabiting invertebrates as a whole, and especially earthworms, so that the publication of papers on earthworms began to increase significantly.

Especially during the last decade, there was a great expansion of interest and research into the application of earthworms into waste management, land reclamation, soil improvement and into the use of earthworms as key bioindicators of soil contamination by chemicals.

The present volume gives a comprehensive overview of these studies and demonstrates the great potential for using the earthworm in a multitude of applied ways, some of which may ultimately form the basis for extensive commercial and industrial development. This kind of commercial application has already started in many parts of the world. This book will provide a source book and a basis for rapid expansion of practical applications in the use of earthworms for solving a range of waste and environmental problems.

Price: Dfl 175.00

Orders to: SPB Academic Publishing, P.O. Box 97747, 2509 GC The Hague, the Netherlands.

Proceedings of the Ninth International Soil Classification Workshop. Properties, Classification and Utilization of Andisols and Paddy Soils. Japan, July-August 1987. D.I. Kinloch, S. Shoji, F.H. Beinroth and H. Eswaran, editors, 1988, xiii + 632p.

The Workshop was held to study the properties, classification and utilization of Andisols and paddy (or wetland) soils. More than 40 papers, including technical and poster papers, were presented in conference sessions and about 20 key pedons were intensively studied during the associated field tours.

There was a notable increase in understanding on important matters such as the distribution of different kinds of Andisols in Japan, the significance of ecosystems in the formation of melanic and fulvic Andisols, the existence of man-induced soil characteristics such as the anthraquic moisture condition, and the roles of soil organic matter and short-range-order minerals in the development of andic properties. Difficulties relating to the transitions between Andisol-Entisol, Andisol-Spodosol and Andisol-Histosol were also raised. The workshop focused on the taxonomy, properties and utilization of Andisols and paddy soils in general and on the mandates of the International Committee on the Classification of Andisols (ICOMAND) and the International Committee on the Classification of Wet Soils (ICOMAQ) in particular.

These proceedings contain the papers and posters presented at the workshop. Background reference material on the field excursions and comprehensive descriptive and analytical data for all study pedons are compiled in the Tour Guide of the workshop, prepared and published by the Host Organizing Committee.

In conjunction with the Tour Guide, the Proceedings form an up-to-date reference publication on the *classification and characteristics of Andisols and their management for various uses.*

Price: US$ 50.00

Orders to: Prof. S. Shoji, Fac. of Agriculture, Tohoku University, 1-1, Tsutsumidori, Amamiyamachi, Sendai 981, Japan.

Libraries in developing countries may obtain a free copy by contacting the country USAID mission.

Remote Sensing of Biosphere Functioning. Ecological Studies 79. R.J. Hobbs and H.S. Mooney, editors. Springer Verlag, New York, Berlin, 1990, ix + 312 p. ISBN 0-387-97098-3. (USA edition); 3-540-97098-3 (German edition). Hardbound.

At present there is enormous concern about the changes that are occurring on the surface of the earth and in the earth's atmosphere , primarily as a result of human activities. These changes, particularly in the atmosphere, have the potential for altering the earth's habitability. International programs unprecedented in scope, including the International Geosphere-Biosphere Program, have been initiated to describe and understand these changes. The global change program will call for coordinated measurements on a

global scale of those interactive physical and biological processes that regulate the earth system. The program will rely heavily on the emerging technology of remote sensing from airborne vehicles, particularly satellites. Satellites offer the potential of continuously viewing large segments of the earth's surface, thus documenting the changes that are occurring. The task, however, is not only to document global change, which will be an enormous job, but also to understand the significance of these changes to the biosphere. Effects on the biosphere may cover all spatial scales from global to local.

The aim of the book is to offer a synthesis of current methodologies and research problems, covering analysis of all levels of biosphere functioning from the remote sensing of the underlying mechanisms to the detection of structural changes at the vegetation and landscape levels. This interdisciplinary survey will be of use to researchers and students in the fields of ecology, biogeochemistry, climatology, oceanography, and remote sensing, and to those with an interest in global environmental issues such as the greenhouse effect.

Price: DM 198

Orders to: Springer-Verlag, Heidelberger Platz 3, D-1000 Berlin 33, Germany; *or:* Springer-Verlag, 175 Fifth Avenue, New York NY 10010, U.S.A.

Ecology. Third edition. R.E. Ricklefs, W.H. Freeman and Comp., New York, 1990, xii + 896p. ISBN 0-7167-2077-9. Hardbound.

A decade has passed since publication of the second edition. The discipline of ecology has grown tremendously, and publication of ecological literature has increased perhaps twofold over publication in the previous decade. Several new scientific journals have been introduced to absorb this increased productivity. These journals reflect the broadening interests of ecologists, with ever greater attention being paid to genetic and evolutionary aspects of populations and communities, to connections between behaviour and ecology, to physiological and morphological bases of organism adaptations, and to the dynamics of ecosystems. The present third edition reflects these broader interests.

The author continues to put high value on three didactic attributes: (1) a solid grounding in natural history, which is the wellspring of all study of ecology; (2) an appreciation of the organism as the fundamental unit of ecology; and (3) the central position of evolutionary thinking in the study of ecology.

It has the following chapters: organisms in physical environments; energy and materials in the ecosystem; population ecology; population interactions; evolutionary ecology; and community ecology.

The book is primarily written for readers beginning their study of ecology, but it will also serve as a source of information and ideas for more advanced students, as well as for those engaged in the practice of ecology as a profession. It is profusely illustrated.

Price: £ 21.95

Orders to: W.H. Freeman & Comp., 20 Beaumont Street, Oxford OX1 2NQ, England; *or:* W.H. Freeman & Comp., 41 Madison Avenue, New York NY 10010, U.S.A.

Ecology and Our Endangered Life-Support Systems. E.P. Odum. Sinauer Associates Publishers, Sunderland, x + 283p. ISBN 0-87893-635-1. Paperback.

This book is a hybrid. It is in part an extensively rewritten and updated version of the author's well-known textbook *Ecology* (1963, 1975). But it is also an attempt to provide not only a textbook for beginning students, but also a citizen's guide to the principles of ecology as they relate to today's threats to earth's life-support systems. In preparing this book, the author has also kept in mind specialists from fields such as engineering, environmental design and planning, environmental education, economics, sociology, agriculture, law, public health, and politics, who are increasingly involved with environmental matters and who need a review of the major principles of ecology to broaden their expertise.

The Prologue, the first two chapters, and the Epilogue are entirely new, and are written in a non-technical style. Chapters 3-8 follow the sequence of *Ecology*, Second Edition. They are somewhat more technical, but have been updated and rewritten so as to be understandable to the non-scientist. Biographical sketches of pioneers in ecological thought have been included to introduce the reader to some of these fascinating people and their work. Special applications of the principles being discussed, and personal views on some of the situations we are facing today, are given. The book is illustrated with line drawings, many of them in the form of easily understood graphic models, and numerous photographs.

Overall, the book can be considered a guide to human ecology, because the relevance of the principles discussed to human affairs is stressed throughout. The emphasis is on causes of and long-term solutions to our environmental problems, rather than the 'quick-fix' treatment of symptoms that has too often been our approach. the energetic inter-relationship between natural, agricultural, and urban ecosystems, and the need to shift attention from the output of production systems to the managements of inputs in order to reduce pollution are especially emphasized.

Price: £ 10.95

Orders to: W.H. Freeman and Comp., 20 Beaumont Street, Oxford OX1 2NQ, England; *or:* Sinauer Associates, Sunderland, MA 01375, U.S.A.

Soil Micromorphology: an Annotated Bibliography 1968-1986. R. Miedema and A.R. Mermut. CAB International and ISSS, 1990, 250 p., ISBN 0-85198-681-1.

During the 6th International Working Meeting on Soil Micromorphology (IWMSM) in 1981 in London, the participants expressed an urgent need of an annotated bibliography of especially recent micromorphological publications. Three short annotated bibliographies, covering the periods 1931-1960, 1960-1965 and 1964-1968 by the Commonwealth Bureau of Soils were available until that time.

The present document is the result of joint efforts of the International Society of Soil Science (ISSS) and the Commonwealth Agricultural Bureaux International (CABI), together with Miedema and Mermut as editors representing the ISSS Subcommission B (Soil Micromorphology). The editors decided to focus on the period 1968 and later, because this period was not covered by an earlier bibliography.

The micromorphological literature in the period 1968-1986 amounted to some 1750 references which include books, proceedings and individual papers. Books and proceedings prior to 1968 and proceedings issued later than 1986 were also included. The individual papers of the proceedings of 1987 and 1989 were excluded. The selection of (sub)micromorphological literature was very laborious on one side because of the gradual boundaries between micromorphology, macromorphology, (clay)mineralogy, microbiology; on the other side decisions on papers related to general soils, soil chemical, soil physical and soil biological literature in many cases were difficult.

Price: £ 25 or US$ 46.50 including postage. For ISSS members US$ 15, if ordered directly from ISSS.
Orders to: CABI, Wallingford, Oxon OX10 8DE, England; *or:* 845 North Park Avenue, Tucson, AZ 85719, U.S.A. *For ISSS members:* ISSS/ISRIC, P.O. Box 353, 6700 AJ Wageningen, the Netherlands.

Soil Micromorphology Newsletter 6, 1989/1990. ISSS Subcommission B. M.J. Kooistra. 48p.

The editorial from past Subcommission president N. Fedoroff is formed by a discussion on recent development in soil micromorphology and directions for future activities.

Furthermore, this newsletter contains reports on the various activities of the Subcommission, a report on the 8th International Working Meeting on Soil Micromorphology, San Antonio, July 1988, information on meetings to come and a list of recent publications.
Requests to: Dr. M.J. Kooistra, Secretary Subcommission B, Winand Staring Centre, P.O. Box 125, 6700 AC Wageningen, the Netherlands.

Proceedings International Conference and Workshop 'Global Natural Resource and Monitoring and Assessments: Preparing for the 21st Century', Venice, September 24-30, 1989. 3 volumes, American Society for Photogrammetry and Remote Sensing, Bethesda, 1990, 1495p. ISBN 0-944426-26-3 (set).

In the 20th Century, we have reached astonishing growth in our understanding of the earth and the breadth of its resources. As we approach the threshold year 2000, it is clear that our continued ability to monitor our natural resources and manage them wisely will be tested as never before.

Despite great strides taken in the last century, our success in inventorying and monitoring the Earth's renewable natural resources is still limited. Governments, international and national governmental, non-governmental organizations, and concerned citizens are increasing their demands for accurate, timely monitoring information on a wide variety of existing and prospective resource issues. Yet inventory and monitoring programs are generally given low political and financial priority in national and international settings. Internationally comparable inventory and monitoring systems have been designed in some areas; in other areas, national and international monitoring programs are non-existent.

At this critical juncture, a group of national and international organizations joined together to develop a conference to put resource monitoring programs on a sound footing into the next century. Recommendations and decisions made at the Venice Conference will have a lasting impact on the knowledge base available to the policy-maker in the 21st Century.

The outcome of this conference and these proceedings will be coordinated and improved national and global assessments thus better enabling mankind to take preventative action against impending environmental disasters, foster economic growth, alleviate poverty, and reduce health threats to the peoples of the world.

The meeting consisted of a conference and workshop. The conference included general and technical sessions, poster displays and commercial exhibits. Participants identified the changes that have to be made in the 1990s to meet the needs of the 21st Century and hence will set the stage for national resource inventory and monitoring systems for the next 10 to 20 years. Four work groups were convened towards the end of the conference to deal with standardization, improving information flow,s technology opportunities and institutional barriers.

These proceedings contain the work group recommendations ,general and technical papers, poster summaries and moderators and recorders notes that have been submitted. Poster summaries have been added to appropriate technical session to provide continuity in the proceedings.
Price: US$ 100.00 for the 3 volumes, including mail charges.
Orders to: American Society for Photogrammetry and Remote Sensing, 5410 Grosvenor Lane, Suite 210, Bethesda MD 20814-2160, U.S.A.

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Price: US$ 60.- per volume.

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Orders to: Elsevier Science Publishers, Journal Dept., Amsterdam, the Netherlands.
Price: Hfl 217.- per volume.

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Humic Substances in the Suwannee River, Georgia: Interactions, Properties, and Proposed Structures. R.C. Averett, J.A. Leenheer, D.M. McKnight and K.A. Thorn, 1989. U.S. Geological Survey Open-File Report 87-577, Denver, Colorado, pp. 1-377.

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Orders to: Elsevier Science Publishers, Journal Dept., Amsterdam, the Netherlands.
Price: Hfl 253.- per volume.

Humic substances in Soils and Agronomy. P. MacCarthy, C.E. Clapp, R.L. Malcolm and P.R. Bloom, 1990. Soil Science Society of America and American Society of Agronomy, Madison, Wisconsin, pp. 1-300. (Developed from the Joint Symposium of ASA-IHSS at the ASA Meeting in Chicago, December 1-5, 1986).

Aquatic Humic Substances: Influence of Fate and Treatment of Pollutants. I.H. Suffett and P. MacCarthy, 1989. Advances in Chemistry Series 219, American Chemical Society, Washington, D.C., pp. 1-864. (Developed from the Joint Symposium of ACS-IHSS at the 193rd National Meeting of the ACS, Denver, Colorado, April 5-10, 1987).

Plant Nutrition. An Introduction to Current Concepts. A.D.M. Glass. Jones and Bartlett, Boston and Portola Valley, 1989, vi + 234p. ISBN 0-86720-080-4.

Plant mineral nutrition is a subject of enormous scope. At the level of applied plant biology it is of critical importance in agriculture and forestry. The successful cultivation of many of our crops now depends upon increasingly sophisticated technologies and an intimate knowledge of plant physiology, particularly plant mineral nutrition.

At the same time plant mineral nutrition has a long history as a fundamental academic component of plant physiology and soil science programs; it is also essential for a proper understanding of plant ecology. Plant mineral nutrition currently draws from and interacts with developments in membrane biochemistry, biophysics and with cell physiology. It therefore offers immense challenge and opportunity.

This book is designed as an introduction to plant mineral nutrition, suitable for undergraduate students and researchers. After an introduction, the development of current concepts in plant nutrition is examined, while Chapter 3 describes the chemical and physical distributions of the nutrient elements in soils, the principal media for supplying inorganic nourishment to plants. Chapter 4 treats the way that root morphology and anatomy have evolved to meet the challenges posed by this distribution.

Chapters 5 and 6 discuss current perceptions of the mechanisms of ion absorption by roots and the transport of the absorbed nutrients through the plant. In Chapter 7 the effects of environmental variables on ion absorption are explored, as well as the physiological adaptations which enable plants to accommodate to these changes, while Chapter 8 deals with the biological functions of the elements in plants. In Chapter 9 the genotypic variations in nutrient acquisition and utilization, and in tolerance to toxic soil situations are explored.

Price: US$ 32.50

Orders to: Jones and Bartlett Publ., P.O. Box 9144, Boston, MA 02205-9144, U.S.A.

The Purpose of Forests. Follies of Development. J. Westoby. Basil Blackwell, Oxford and New York, 1987, published in paperback 1989, xiii + 343p. ISBN 0-631-17143-6 (paperback), 0-631-15657-7 (hardback).

Forest conservation and forest development in the third world have become matters of public interest and public controversy. Jack Westoby was the first to argue that forest resources could be harnessed to third-world development. For three decades he was at the centre of debates about the role of forestry in socio-economic development. His writings, speeches and comments advanced theory and influenced practice. He continually posed new questions about the role of forest development, throughout the world. The papers in this valuable and wideranging collection not only summarize the issues and the experience gained; often they changed the direction of the debate.

The writings and speeches in this volume have been selected to illustrate Westoby's contributions to international forestry over the last two decades and more, and to show something of the evolution of his thinking. The problems be addressees are ones central to international forest policy and to the proper social responsibilities of foresters. This collection thus offers a welcome opportunity to bring within one cover papers which ,together, form a significant part of the arguments within the field.

They are arranged into three Parts, whose approximately chronological sequence reflects – with some unavoidable arbitrariness – the recent history of arguments about forestry's contribution to economic and social well-being. Part I is a selection of papers which Westoby wrote during the 1960s, as an officer of the Forestry Department of FAO, on forest industries and their part in propelling economic development. The papers of Part II explore the responsibilities and dilemmas of the forestry profession in deciding which, among conflicting interests, to serve, and criticize its frequent subservience to economic and political power. Those of Part III (written since his retirement in 1974) carry further the work of developing and enlarging his ideas of what forestry should be about – which be earlier defined as 'making trees serve people'.

Price: £ 12.95 (paperback)

Orders to: see below.

Introduction to World Forestry. J. Westoby. Basil Blackwell, Oxford and New York, 1989, ix + 228p. ISBN 0-631-16134-1 (paperback), 0-631-16133-3 (hardback).

This book is about forests and people: about the origins of trees; about the development of the human species, its uses of trees and its relations with the forests; about the ways in which human societies have destroyed forests, and also the ways in which they have learned to manage, preserve and create forests; about where the forests used to be and where they are today; about what state they are in, how they came to be that way, what is happening to them now, and why it matters to us.

The book opens with a description of the evolution of trees, their biochemistry, and their ecological importance in both global and local terms. The author compares the different methods of forest management, past and present, and considers why so few of the forests of the world are managed. He describes and assesses the current state of the world's forests and considers the issues of forest ecology in both the developed and developing world.

The author, who died shortly after completing the book, concludes with a critique of current Western and development policies for the future of forests, and puts forward a programme that would take account of the scientific, cultural and economic needs of present and future generations.

Price: £ 12.95 (paperback), £ 35.00 (hardback).
Orders to: Basil Blackwell, 108 Cowley Road, Oxford OX4 1JF, England; *or:* Basil Blackwell, 432 Park Ave.S., Suite 1503, New York NY 10016, U.S.A.

Geography and Resource Analysis. Second edition. B. Mitchell. Longman, 1989, xvii + 386p. ISBN 0-582-46364-5. Paperback.

The goals of this book are: (1) to introduce the reader to contributions by geographers and by those in related disciplines to resource analysis has evolved out of several major traditions in the discipline; (3) to identify research issues which must be considered in resource analysis and how these have been handled by geographers; and (4) to identify resource management issues and how geographical research has contributed to their understanding and solution.

The first edition of this book was the first one by a geographer to interrelate research traditions in geography, basic research issues and natural resource policy concerns in an account of modern resource management theory and practice. This second edition, whilst maintaining the overall orientation and structure of the first, has incorporated material regarding recent changes in research activity. New examples have been introduced throughout to reflect work done in resource analysis during the 1980s, especially with regard to developing nations.

Among the issues dealt with are resource inventory and allocation, perceptions and attitudes to resource use, landscape evaluation, concepts of carrying capacity, hazards and risk assessment, environmental impact assessment, institutional constraints and opportunities in resource management, resource evaluation, policy formulation and decision making. The book ends with a forward-looking chapter, focusing on resource management issues judged to have significance for the 1990s and beyond.
Price: £ 12.95
Orders to: Longman Scientific and Technical, Longman House, Burnt Mill, Harlow, Essex CM20 2JE, England; *or:* John Wiley & Sons, 605 Third Avenue, New York NY 10158, U.S.A.

Fertilizers and Food Production. Summary Review of Trial and Demonstration Results 1961-1986. The FAO Fertilizer Programme. FAO, Rome, 1989, 111p.

The FAO Fertilizer Programme has been active in the developing world since 1961. It is a special action programme assisting farmers in developing countries to produce more and better food economically without depleting the world's natural resources. The International Fertilizer Industry Association (IFA) has strongly supported this programme since its inception.

Following earlier documents on the results of fertilizer trials and demonstrations in 1974, 1980 and 1981, the Fertilizer Programme has now published the present review covering the period 1961-1986.

It illustrates the work carried out by the field staff and provides relevant information on crop responses to fertilizers.
Requests to: IFA, 28 rue Marbeuf, F-75008 Paris, France.

Problems of Soil Conservation. Nature and Environment Series 39. W.E.H. Blum. Council of Europe, Strasbourg, 1988, 62. ISBN 92-871-1629-6.

Based on the definition of soils and their characteristics the five most important functions of soils are described, and the actual soil conservation problems explained as result of spatial and temporal competition between these functions.

Two main causes of soil conservation problems are identified: (1) global impacts through air pollution, resulting in soil acidification , soil pollution by toxic substances and soil contamination by radioactive compounds; and (2) specific and locally controlled impacts through excessive soil use, causing soil losses through sealing, stripping and mining, soil intoxication through inappropriate dumping of refuse and soil erosion and pollution through agricultural cultivation.

On the basis of an assessment of soil damages and hazards future measures are proposed defining guiding principles and priorities for actions.

The publication is also available in French: Problèmes de conservation du sol, ISBN 92-871-1628-8.
Orders to: Sales agents around the world, *or:* Publications and Documents Division, Council of Europe, BP 431,F-67006 Strasbourg Cédex, France.

Publications of the International Agricultural Research and Development Centers. CGIAR and IRRI, 1989, 730 p. ISBN 971-104-216-9.

This new edition contains all publications of the research institutes belonging the Consultative Group on International Agricultural Research (CGIAR), non-CGIAR supported centers e.g. the Asian Vegetable Research and Development Center (AVRDC) and the International Council for Research in Agroforestry (ICRAF), and a number of other institutions, such as the German Agency for Technical Cooperation (GTZ) and the Australian Centre for International Agricultural Research (ACIAR). An excellent keyword index facilitates retrieving relevant titles.
Orders to: International Rice Research Institute, Communication and Publications Dept., P.O.Box 933, 1099 Manila, the Philippines.

Construction Guide for Soils and Foundations. Second edition. R.G. Ahlvin and V.A. Smoots. Wiley Series of Practical Construction Guides. John Wiley & Sons, New York, Chichester, 1988, xxi + 276p. ISBN 0-471-80486-X. Hardbound.

This book is one of the Wiley Series of Practical Construction Guides. Its aim is to provide practical and useful information in accessible form, needed by those who will physically construct the foundations.

This volume presents clear discussions of the procedures, materials and equipment used in treating soils and installing foundations. Specific topics include reinforced earth retaining walls, the use of filter fabrics, the use of synthetic membranes, dynamic compaction, and the analysis of capacity of piles using the wave equation.

Part One presents a simplified explanation of what to expect from soils encountered during construction. It discusses the nature and types of soils, such as swelling soils and sensitive soils. It is intended for busy contractors, not expert in soil mechanics, who must deal with soils during construction. It is also intended for use in acquainting inspectors, learning soil technicians, and soil laboratory personnel with the nature and behaviour of soils.

Part Two presents, in detail, aspects of soil, soil behaviour, and foundations commonly encountered in construction. It emphasizes that soil is as much a part of the overall structure as is the concrete, steel, and wood superstructure.

Many of the ideas in the book are based on experience, including the descriptions of job problems and their solutions, and of things to watch for on the job.

Price: £ 45.00

Orders to: John Wiley & Sons, 605 Third Avenue, New York NY 10158-0012, U.S.A. *or:* John Wiley & Sons, Baffins Lane, Chichester, West Sussex PO19 1UD, England.

Sustainable Agriculture in Temperate Zones. Ch.A. Francis, C. Butler Flora and L.D. King, editors. John Wiley & Sons, New York, Chichester, 1990, xiii + 487 p. ISBN 0-471-62227-3. Hardbound.

Sustainable agricultural systems for production of food, feed grains, fiber, and other human needs are essential for our long-term survival and well being. With all good intentions, we have met most of the food challenges of a growing global population to date through applications of science and investment of fossil fuel energy. New technology has provided the key for much of this modern miracle in agriculture. Yet some of the consequences of the application of this singular industrial approach or paradigm were not anticipated.

We are learning now that inappropriate applications of this technology in a highly specialized, industrial agriculture can have unintended and unfortunate consequences: nitrate in ground water, pesticides in waterways and on food, soil erosion from sloping lands. We are beginning to appreciate the very critical nature of finite supply of non-renewable fossil fuel energy sources and some essential nutrients that are crucial for plant growth. There are certain aspects of the structure of modern agriculture and the prevalent reward system that make it difficult to sustain this, one of our most important industries. Equally important, the migration of many people out of farming has brought into question the sustainability of rural communities and an entire way of life that many consider important to our future.

This book reviews the current thinking about the philosophy of sustaining agriculture into the future, bringing together research data and reference material from the literature to support the hypothesis that agriculture can be made productive, environmentally sound, and resource efficient. Although the focus is on temperate zones, the principles that are explored have application in any climatic or geographical regions.

This is a book about alternatives, about options in the use of Technology, about the future. To some degree, there is a reliance on the concepts of stewardship, of biodiversity, of reliance on mixed farming systems. Yet the authors do not advocate a return to the systems or methods of the past. It focuses on a future-oriented approach that incorporates the most modern advances in biotechnology, in engineering, in systems studies, and in other relevant areas of science.

Among the topics covered in the wide ranging volume are hybrids, sustainable pes and weed management, sustainable soil fertility practices, legumes and crop rotation, management and soil biology, and pasture management. It also examines major practical, economic, and policy issues confronting the conversion from traditional agricultural practices to sustainable, low-input farming systems. Of particular interest is a case study that presents a view of a resource-efficient farm with livestock.

Price: £ 55.15

Orders to: see below

Surface Complexation Modelling. Hydrous Ferric Oxide. D.A. Dzombak and F.M.M. Morel. John Wiley & Sons, New York, Chichester, 1990, xvii + 393 p. ISBN 0-471-63731-9. Hardbound.

Experimental and theoretical investigations conducted since the 1960s, primarily by researchers interested in the chemistry of natural waters, have led to the development of a general theory for charge development and ion sorption on aqueous colloids and particles. The resulting surface complexation theory represents a blending of the chemical theories of aqueous surface phenomena prominent in the early 1900s, and the more recent physical theories that emphasize establishment of an electrical double layer at the water/solid

interface. Fundamental to the surface complexation theory are the related propositions (1) that sorption of ions involves site-specific binding at surface functional groups, (2) that these reactions can be described using mass law equations, and 93) that the variable electrostatic effects that influence surface reactions can be accounted for by including in the surface complexation constants a coulombic term derived from electrical double layer theory.

This work describes the development of the surface complexation approach to modelling sorption on minerals, a central component of the rapidly evolving field of aquatic surface chemistry. In particular, it covers the modelling of sorption on hydrous oxides which are important sorbents in natural aquatic systems and a variety of engineering processes.

This book is both a general and a specific treatise. It begins with discussion of the historical background of surface complexation modelling, the Generalized Two-Layer Model and its relation to other surface complexation models, the experimental data that constrain surface complexation models, and the procedure for extraction of model constants from such data. It then focuses specifically on experimental data and model constants for hydrous ferric oxide. In-depth coverage includes: (1) a broad-based introduction to the field, along with a description of a particular surface complexation model; (2) a compilation and interpretation of experimental data for equilibrium sorption of inorganic ions on hydrous ferric oxide; and (3) a guide to surface complexation calculations, tables, and graphs to facilitate hand calculations, and references for available computer programs.

This book also addresses general issues related to surface complexation and its modelling, using the results obtained for hydrous ferric oxide as a basis for discussion. In particular, the importance of the coulombic term in surface complexation models is elucidated, and linear free energy relationships useful for predicting surface complexation constants are identified.

Price: £ 66.70

Orders to: see below

Soil Biology Guide. D.L. Dindal. John Wiley & Sons, New York, Chichester, 1990, xviii + 1349 p. ISBN 0-471-04551-9. Hardbound.

Soils of the world usually abound with active individuals and propagules representing a multitude of microbial and invertebrate taxa. Few humans are aware of the existence of such cryptic life forms. These soil biota are organized both structurally and functionally into specific microcommunities. Such organized microcommunities are modified by human activities with the degree of modification being dependent on the nature, intensity, and longevity of human disturbance. In disturbed soils, as well as undisturbed soils, the types and numbers of sol organisms and their specific functions reflect the pedogenic status, vegetative successional patterns, and environmental perturbations of given sites.

The invaluable role played by soil microorganisms -bacteria, actinomycetes, fungi, algae and protozoa – includes the dynamic decomposition of organic matter and production of humus, cycling of nutrients and energy and elemental fixation, soil metabolism, and the production of complex compounds that cause soil aggregation. These active organisms with their high surface area-to-volume ratio are living tissue pools of chemical elements, compounds, and energy. Many soil microbes are functionally related in a symbiotic way to plants and animals.

The present book was written and compiled with the following specific objectives in mind: (1) To produce one book devoted to the taxonomy, biology, and ecology of representative North American soil biota; (2) To provide an illustrated means of identification of most soil forms for use by anyone with an interest or a problem in soil biology; (3) To demonstrate the diversity of soil organisms that comprise microcommunities associated with characteristic soils and ecosystems; (4) To elucidate some of the adaptations of microorganisms and invertebrates to their terrestrial existence; (5) To prepare a source book as a basis on which reference collections can be made; (6) To provide a teaching-research resource concentrating on taxonomy, biology, and ecology of soil biota; and (7) To stimulate the imagination with diverse ideas toward furthering education and research in soil ecosystems. For the first time ,most of the major representative microbial and invertebrate inhabitants of North American soils are drawn together as they are found in nature. All the specialists have presented what they believe to be the most valuable mass of knowledge available to date on each taxon. This book, therefore, represents the 'state of the art' of the biology, taxonomy, and ecology for each soil biotic group. It was organized to support a broad audience of users.

Price: £ 78.15

Orders to: John Wiley & Sons, 605 Third Avenue, New York NY 10158-0012, U.S.A. *or:* John Wiley & Sons, Baffins Lane, Chichester, West Sussex PO19 1UD, England.

Soil Physical Conditions and Plant Roots. J. Glinski and J. Lipiec. CRC Press, Boca Raton, 1990, 250p. ISBN 0-8493-6498-1. Hardbound.

Plant production is closely related to soil environment, influencing both root growth and function. Root penetration and distribution i soil depend on its chemical, physical, and biological properties. Root-soil relations are very complex and dynamic in the rhizosphere. Root environments are rapidly changing especially in respect to soil physical conditions such as mechanical properties, moisture, aeration, and temperature.

Soil and plants are very complicated objects from the point of view of their composition and functions. The relationships between them are much more complicated.

Soil-plant system relationships have been analyzed in a number of valuable reviews. With some exceptions, these books devote little attention to the physical aspects of the problem.

Recent years have brought an increasing number of papers concerned with the effect of physical properties of soil on the growth and function of root systems. These, however, are scattered among a number of publications, and to authors' knowledge, there is no book presenting such relations comprehensively.

Data on the interrelations between root systems and soil physical characteristics constitute an indispensable element in the modelling of root growth and processes in natural environment, and especially in the prediction of water and nutrient uptake by plant roots.

The need for designing such models arises from the fact that investigations of root systems are very time- and labour-consuming.

Among papers on soil-root relationships, most are concerned with problems of soil aeration, water, and compaction in relation to root growth and development. These, of course, are the main soil factors influencing plants.

The book is addressed to research workers and advanced students in soil and plant sciences and may also be of interest to agronomists, ecologists, and related specialists.

Price: US$ 145.00 or £ 116.00

Orders to: Wolfe Publishing Ltd., Brook House, 2-16 Torrington Place, London WC1E 7LT, England; *or:* CRC Press, 2000 Corporate Blvd., N.W., Boca Raton, FL 33431, U.S.A.

Geomorphology and Hydrology of Karst Terrains. W.B. White. Oxford University Press, New York and Oxford, 1988, xiii + 464p. ISBN 0-19-504444-4. Hardbound.

In many regions of the earth, usually where carbonate rocks underlie the surface, there occurs a landscape known widely and loosely as *karst*. Karst landscapes and their underlying caves are created by the chemical solution of the bedrock. The characteristic landforms of karst regions are: (1) Closed depressions of various size and arrangement; (2) Disrupted surface drainage; and (3) Caves and underground drainage systems.

The degree of development of these landforms varies greatly from one region to another. Some karst terrains are a rough and jumbled land of deep depressions, isolated towers, and pointed hills, Others may be gently rolling plains, sol-covered, with perhaps only the gentlest of depressions to label them as karst.

Investigations of karst were often in remote and rural areas far from the hassle of the human scene. Indeed, many karst researchers found the subject interesting because it allowed them to avoid the human scene. All that has changed. Urbanization has crawled over the mountains and into once rural limestone valleys. the geomorphology of karst landscapes and the hydrology of karst drainage systems are now subjects of interest to water-supply specialists, urban planners, and environmental engineers. One of the primary objectives of this book is to address karst hydrology and geomorphology from this new point of view.

The first four chapters are mainly descriptive. They paint a picture of surface and underground landforms in karst regions, and name a lot of names. Chapter 5 provides a summary of carbonate geochemistry as the subject is understood at present. Chapter 6 does the same for karst hydrology. It begins with groundwater in ordinary porous media aquifers, introduces some principles of fluid mechanics, and then outlines some of the current ideas on the hydrology of carbonate rocks.

Chapters 7, 8, 9 and 10 are the heart of the subject. These chapters discuss the chemistry of karst waters, the processes of sedimentary in-filling, the origin of caves, and the evolution of karst systems down through geologic time. The material in these chapters is drawn mainly from contemporary research. Chapters 11 and 12 briefly introduce karst in evaporite rocks, and in such rocks as granites and quartzites.

Price: £ 35.00

Orders to: Oxford University Press, Walton Street, Oxford OX2 6DP, England; *or:* Oxford University Press, 200 Madison Avenue, New York NY 10016, U.S.A.

Soils on a Warmer Earth. Developments in Soil Science 20. H.W. Scharpenseel, M. Schomaker and A. Ayoub, editors. Elsevier Science Publ., Amsterdam, Oxford, 1990. xxii + 274p. ISBN 0-444-88838-1. Hardbound.

This volume contains the proceedings of an International Workshop on Effects of Expected Climate Changes on Soil Processes in the Tropics and Sub-tropics, which was organized by UNEP and the ISSS and held in Nairobi in February 1990.

The motivation for organizing the workshop was threefold. Soil science is heavily involved in the problems of trapped radiation in the atmosphere by greenhouse effect (GHE) promoting gases. The effect of soils on the GHE syndrome was analyzed in a preceding conference: the International Conference on Soils and the Greenhouse Effect, Wageningen, the Netherlands, August 1989 (Soils and the Greenhouse Effect, Wiley & Sons, 1990). An answer was needed regarding the effect of climate change on sustainable productivity of soils, with emphasis on tropical and subtropical regions.

The confusing dispute in scientific and popular science journals regarding the predictions of effects of temperature and eustatic sea-level rise, as well as a wide array of possible advantages and disadvantages due to especially CO_2-rise, had to be thoroughly evaluated against the background of impacts on soil changes.

A state of the art of predictive approaches, recognized by the majority of scientists, had to be elaborated. In this volume some 24 scientists contributed to such an evaluation and inventory. Though differences in opinion on assumptions, approaches and predictions still exist, these proceedings clearly bring the discussion a great step forward, and it is hoped that they will be of assistance to the soil science community in deciding on concepts for soil-related core programmes of the forthcoming International Geosphere-Biosphere Programme.
Price: Dfl 180 or US$ 92.25
Orders to: see below.

Ecological Assessment of Environmental Degradation, Pollution and Recovery. O. Ravera, editor. Published for the Commission of the European Communities by Elsevier, Amsterdam, Oxford, 1989, xiv + 369 p. ISBN 0-444-8736-9. Hardbound.

This publication is based on lectures of a course held at the Joint Research Centre, ISPRA, October 1987. This course was structured according to the following topics: (a) terrestrial and aquatic ecosystem concept; (b) structure, functions and evolution of the ecosystem in relation to the natural and anthropogenic influences, and (c) concept of stress, assessment and restoration of terrestrial and aquatic ecosystems. These general concepts were developed in a series of lectures presented by well-known experts in their specific fields, taking into account the ecological principles and environmental management. For the various aspects of the environmental problems, the state-of-the-art, the principles of restoration techniques, the results obtained by their application and the research needs to acquire a better knowledge of the ecological processes, were discussed. The lectures were illustrated by several case studies concerning forests, lakes, reservoirs, rivers, soil and the interrelations between air and terrestrial and aquatic ecosystems.

This book contains the lectures presented at the course, reviewed by the authors, and complemented throughout with numerous figures and tables.
Price: Dfl 295.00 or US$ 155.25
Orders to: In USA and Canada: Elsevier Science Publ. Comp., P.O. Box 882, Madison Square Station, New York NY 10159, U.S.A.; *Elsewhere:* Elsevier Science Publishers, P.O. Box 211, 100 AE Amsterdam, the Netherlands.

SWRRB – A Basin Scale Simulation Model for Soil and Water Management. J.G. Arnold, J.R. Williams, A.D. Nicks and N.B. Sammons. Texas A&M University Press, College Station, 1990, 142 p. plus 10 appendices and 8 diskettes. ISBN 0-89096-337-1. Hardbound.

SWRRB (Simulator for Water Resources in Rural Basins) is a model developed for simulating hydrologic and related processes in rural basins. The purpose of this model is to predict the effect of management decisions on water and sediment yields for ungaged rural basins. To do this, the model is (a) physically based, using readily available dat since calibration is not possible on ungaged basins; (b) capable of computing the effects of management changes on output; (c) efficient in its computations, allowing simulation on a variety of management strategies; (d) able to simulate long periods for use in frequency analysis; and (e) capable of operating on subdivided basins. The model is comprehensive, covering all aspects of the hydrologic cycle: surface runoff, percolation, return flow, evapotranspiration, snow melt, transmission losses, pond and reservoir storage, sedimentation, and crop growth.

The book provides a complete documentation of equations used in the model and program structure. A detailed description of model inputs and outputs is given, along with several example watersheds. Diskettes are included, with all source codes (in Fortran) and the executable files. Compilation is not required unless code changes are made. The diskettes also have soils and weather data required to run the model. A chapter in the book details running the model on a personal computer.

The work has been used successfully in water rights cases and in city water supply studies. The inclusion of pollutants associated with the water and sediment modelled by SWRRB and the consideration of off-site effects of land management decisions in polluting downstream rivers, lakes, and estuaries make the model powerful in studying water quality. SWRRB allows farmers, researchers, soil scientists, and others to make reasonably accurate forecasts of agricultural conditions in their region and to predict the effect of management decisions.
Price: US$ 65.00
Orders to: Texas A&M University Press, Drawer C, College Station, TX 77843-4354, U.S.A.

Gedächtniskolloquium 'Ernst Schlichting' Memorial Workshop. Tagungsband. Stuttgart-Hohenheim, 21-23 April 1989. Hohenheimer Arbeiten. K. Stahr, H.-P. Blume and R. Jahn. Ulmer, Suttgart, 1990, 233 p.

This publication contains 11 professional contributions to the Memorial Workshop, organized in honour of Prof. Ernst Schlichting, an excursion guide and the Ernst Schlichting Archives. For the 'in memoriam' see Bulletin 73, page 36.
Requests to: Dr. R. Jahn, Universität Hohenheim (310), Postfach 700562, D-7000 Stuttgart 70, Fed.Rep. of Germany.

Fundamentals of Optical, Spectroscopic and X-ray Mineralogy. S. Mitra. John Wiley & Sons, New York, Chichester, xv + 236 p. ISBN 0-470-21043-5. Hardbound.

The primary scope of this text-book covers the transmission as well as reflection optics of minerals and the methods of their studies. To explain the optical behaviour of minerals, some relevant concepts in spectroscopy (optical to infrared) have been introduced. This book fills the need of the students to a better understanding of the physical nature of minerals through studies in ir-visible-x-ray region.

This book contains the following chapters: General Optics: Interactions of Light with Matter; Study in Polarised Light; Optical (Absorption) Spectroscopic Studies of Minerals; Reflection Optics; Reflection Spectroscopy: An Outline; and X-ray Optics. It also offers as appendices the reflection properties and X-ray data of minerals.

This book lucidly introduces the principles of modern methods of mineral optics in a single volume for the students of graduate and post-graduate levels.

Price: £ 16.80

Orders to: John Wiley & Sons, 605 Third Avenue, New York NY 10158-0012, U.S.A. *or:* John Wiley & Sons, Baffins Lane, Chichester, West Sussex PO19 1UD, England.

Dictionnaire de Science du Sol. 2e édition. J. Lozet et C. Mathieu. Lavoisier Technique et Documentation, Paris, 1990, vii + 384 p. ISBN 2-85206-617-3.

Cette deuxième édition a été mise à jour et augmentée d'une centaine de pages. Elle donne la définition de plus de 2 800 termes spécifiques à la pédologie, la science du sol et autres disciplines traitant de l'analyse des paysages et de l'utilisation et conservation des terres. Elle est illustré de 52 photos ainsi que de nombreux tableaux et figures.

L'index constitue un véritable dictionnaire anglais-français de Science du Sol. Des annexes donnent: (1) les ordres, sous-ordres et grands groupes de la Soil Taxonomy (1975) du SCS-USDA; (2) les classes et sous-classes de sols de la Classification Française CPCS (1967); (3) la classification de la Rép. Féd. Allemande; (4) les unités pédologiques de la Carte mondiale des sols FAO-Unesco; et (5) l'appelation ancienne et nouvelle des horizons, accentuent le côté pratique de ce dictionnaire.

Les termes définis recouvrent la pédologie générale, la minéralogie, la pétrographie, la micromorphologie, la géomorphologie ainsi que l'application des grands systèmes de classification. Il sera, à ce titre, indispensable aux pédologues, agronomes, géomorphologues, géographes, forestiers et tous spécialistes s'occupant d'un aspect du sol ou de la couverture superficielle de la terre.

Price: FF 425

Commandes à: Lavoisier, 14 rue de Provignie, F-94236 Cachan Cédex, France.

Dryland Agriculture. Strategies for Sustainability. Advances in Soil Science vol. 13. R.P. Singh, J.F. Parr and B.A. Stewart. Springer Verlag, New York, Berlin, 1990, xiv + 373 p. ISBN 0-387-97204-8 (U.S. ed.), 3-540-97204-8 (German ed.). ISSN 0176-9340. Hardbound.

Arid and semiarid regions comprise almost 40% of the world's land area and are inhabited by some 700 million people. Approximately 60% of these drylands are in developing countries. Low rainfall areas constitute from 75-100% of the land area in more than 20 countries in the Near East, Africa, and Asia. These dryland areas will continue to produce most of the world's food grains for expanding populations in the years ahead. However, yields are extremely low compared with those of the humid an subhumid regions. In some countries of sub-Saharan Africa and the Near East food grain production per capita has declined significantly during the past decade. Although part of this decline can be attributed to high rates of population growth, periodic drought, and unfavourable agricultural production and marketing policies of the national governments, much of it results from the steady and continuing degradation of agricultural lands from soil erosion and nutrient depletion and the subsequent loss of soil productivity.

Continued demand for food and fiber, coupled with a sharp decline in the growth rate of irrigation development, means that much of the additional agricultural production in future years must come from cultivated land that is not irrigated. Agricultural production will be expanded in the arid and semiarid regions because these regions make up vast areas in developing countries where populations are rapidly rising. Expansion of agriculture in these fragile regions presents a major challenge because soil degradation can occur quickly if poor management practices are followed.

This series was established to provide a forum for leading scientists to analyze and summarize the available scientific information on a subject, assessing its importance and identifying additional research needs. Much has been learned about dryland farming, and although the technologies developed cannot be transferred directly to other regions of the world, the principles are universal. The authors of the contributions in this book summarize past studies and document the important principles involved in dryland farming.

Price: DM 198

Orders to: Springer Verlag, P.O. Box 105280, D-6900 Heidelberg 1, Germany.

Soils of the British Isles. B.W. Avery. CAB International, Wallingford, 1990, 480p. ISBN 0-85198-649-8. Hardbound.

This book is an attempt to collate the accumulated knowledge and understanding of soil variation in the British Isles which has stemmed from the extension of field surveys and associated laboratory studies over the last half century. Use is made of a definitional classification scheme devised for the purpose, which is slightly different from that currently in use in England and Wales. It describes the salient properties, distribution, environmental relationships and agronomic significance of the main kinds of soil that have been distinguished, illustrates them by data on more than 180 representative soil profiles, and relates them to current internationally used schemes. Four pages of colour plates are included. Although the primary objective has been to provide an authoritative systematic review for practitioners and students of soil science, the coverage and presentation have been framed with the additional aim of eliciting the interest of workers in allied fields and others concerned with the use, management and conservation of land resources.

This comprehensive book on the soils of the British Isles, written by a former Deputy Head of the Soil Survey of England and Wales, is well produced and illustrated and will be a reference work for many years.

Price: £ 67,50 or US$ 118 in Americas.

Orders to: CAB International, Wallingford, Oxon OX10 8DE, U.K.; *or:* 845 North Park Avenue, Tucson AZ 85719, U.S.A.

The United States Department of Agriculture in Historical Perspective. Special Issue of Agricultural History. Vol. 64, no.2, Spring 1990. A.I. Marcus and R. Lowitt, editors. Agricultural History Society, 1990, 351p. ISSN 0002-1482.

In 1989, the United States Department of Agriculture celebrated its centennial as a cabinet department. Raised to that station by an Act of Congress approved on February 9, 1889 (25 Stat 659), the nation's first client-oriented executive department received an annual appropriation of $1,134,480. Today the department's yearly budget is over 51 billion, 359 million. Before it became a full-fledged member of the executive branch, the department did much more than collect, propagate and disseminate seeds and plants. The Commissioner of Agriculture had institutionalized within the USDA divisions of botany, microscopy chemistry, entomology, forestry, pomology, ornithology and mammalogy, sections of mycology and vegetable pathology, a bureau of animal industry and an office of experiment stations. Thereafter the department's duties and responsibilities markedly increased. Today over 120,000 men and women work for the USDA in some capacity.

Any investigation of the USDA's past 100 years should document how the changes in the manifold activities occurred, consider the desirability of those changes and suggest if the department has failed or succeeded in meeting its stated objectives. At the symposium 'The United States Department of Agriculture in Historical Perspective', which was held on the campus of Iowa State University in Ames, Iowa on June 15-18, 1989, more than 100 scholars met to examine those and other issues. This volume is comprised of selected papers and comments from that conference.

Taken as a whole, these papers and comments provide only a glimmer of insight into the USDA's colourful history. They do not constitute a complete or definitive history of the agency as an executive department. Their utility is that they plug a handful of the gaps in our knowledge of USDA activities.

Price single issue: US$ 6.25

Orders to: Agricultural History, Periodicals Department, University of California Press, Berkeley, CA 94720, U.S.A.

Ecotoxicology. The Study of Pollutants in Ecosystems. Second Edition. F. Moriarty. Academic Press, London, San Diego, 1990, 289p. ISBN 0-12-506762-3 (paperback ed.).

The term ecotoxicology was coined as a natural extension from toxicology, the science of the effects of poisons on individual organisms, to the ecological effects of pollutants. However, the transition from the study of single organisms to that of ecosystems has brought complexities which do not yet appear to be fully appreciated. Toxicology is concerned with effects on single organisms; ecotoxicology is concerned with effects on ecosystems. The immediate effects of pollutants are on individual organisms, by either direct toxicity or altering the environment, but the ecological significance, or lack of it, resides in the indirect impact on the populations of species. In addition, some pollutants have no direct effects on individual organisms, but still have considerable ecological consequences.

The present book starts with a basic introduction to the principles of community ecology. The chemistry or toxicology student is thus armed with the biological background necessary to see pollutants in an environmental context. Discussions of the effects of pollutants and methods of monitoring pollution are completed by a chapter with some case studies.

Price: £ 13.50

Orders to: see below

Environmental Physiology of Plants. Second edition. A.H. Fitter and R.K.M. Hay. Academic Press, London, San Diego, 1989, xiii + 423p. ISBN 0-12-257764-7 (paperback ed.).

In this new edition some chapters have been extensively rewritten, while others retain most of their original structure. The subject matter of this book lies on the boundary between physiology and ecology, but the authors have chosen to write a physiology text from an ecological standpoint, hence the title. Since the physiology it discusses is that which affects the interaction of the plant with the environment, and since this interaction of the plant with the environment, and since this interaction determines how well the plant functions in a given environment (and so ultimately its fitness), the book is also about adaptation, and associated concepts such as optimization are therefore central of its theme. Chapter 1 introduces these ideas explicitly and places the rest of the formerly to photosynthetic pathways (C^3, C^4 and CAM), which are covered extensively in Chapters 2, 4 and 5, and to morphological as opposed to physiological responses to nutrient deprivation (Chapter 3). Other topics that have received particular attention in this edition are water movement in the soil-plant system (Chapter 4), the responses of plants to extreme temperatures (Chapter 5) and acid depositions (Chapter 7).

Price: £ 16.95

Orders to: Academic Press, 24-28 Oval Road, London NW1 7DX, England; *or:* Academic Press, San Diego, CA 92101, U.S.A.

Acid Deposition: Sources, Effects and Controls. J.W.S. Longhurst, editor. British Library and Technical Communications, Letchworth, 19.., 344p. ISBN 0-946655-33-2. Hardbound.

The purpose of this collection of papers is to review our understanding of the causes and effects of acid deposition, to present new data that assists in the provision of a fuller understanding of cause, process and implication and thus to assist in defining the research agenda of the future.

The book will ideally serve both as a course text in undergraduate studies for many disciplines and as a reference text for libraries or researchers. The materials presented are deliberately European in perspective, drawn form the Federal Republic of Germany, Hungary, Norway, Sweden and the United Kingdom. The current position as regards deposition monitoring, ecological effects and control technologies is presented in five sections: acid deposition monitoring, freshwater acidification, soils and forest systems, structural materials and control technologies.

Each section is introduced by an overview paper outlining the contemporary understanding and identifying areas requiring future work. Specialist papers presenting new data or re-interpretations of existing information comprise the remainder of each section.

Price: £ 45 in U.K.; £ 47 elsewhere, including mailing charges. Prepayment required.

Orders to: see below

Acid Rain and the Environment 1984-88. A Select Bibliography. L. Grayson. British Library and Technical Communications, Letchworth, 1988, 240p. ISBN 0-7123-0757-5.

Acid rain is one of today's most serious environmental problems. Yet only a decade ago it was an issued of interest to only a handful of environmental scientists. Now scarcely a day passes without it featuring in the news media or scientific and technical journals of Europe and North America.

Acid rain's sudden rise to political prominence is essentially a result of its transborder effects and the recent discoveries of severe and rapidly accelerating damage to the forests and aquatic ecosystems of the United States, Canada, and Northern Europe.

The actual and potential hazards of increasingly widespread acid rain demand that the phenomenon be carefully evaluated. Failure to limit the causes of acid rain will have profound economic consequences. In addition to damage to the natural environment, accelerated corrosion rates of industrially-important materials are becoming significant.Historic and cultural monuments are also threatened by acid deposition and serious concern is now being expressed over the potentially damaging effects of acid rain of human health.

This new bibliography complements a previous volume covering 1980-1984.

Price: £ 29 in U.K.; £ 32 elsewhere, including mailing charges. Prepayment required.

Orders to: Technical Communications, 100 High Avenue, Letchworth, Herts SG6 3RR, England.

The Rudy Grah Memorial Agroforestry Collection: An Annotated Bibliography. Dept. of Forestry and Research Management, University of California, Berkeley, 1990, 110p.

This collection with over 700 entries encompasses all aspects of Agroforestry. Literature covered is mostly in English, some in French and Spanish. The annotations are in English. An author index is included, as well as a practical keyword index.

Price: US$ 15.00

Orders to: Ms. Louise Fortmann, Dept. of Forestry and Resource Management, 145 Mulford Hall, Berkeley, CA 94720, U.S.A.

IGBP Reports

The Land-Atmosphere Interface. IGBP Report No.10. S.J. Turner and B.H. Walker, editors. IGBP, Stockholm, 1990, 39p. ISSN 0284-8015.

The International Geosphere-Biosphere Programme requires the coordination and integration of information among and between diverse scientific disciplines. Modelling provides a primary means by which such a synthesis can be obtained. Comprehension system models that integrate existing knowledge of how component parts of the system function together are necessary to understand climatic change and predict the effects of that change on the biosphere. The present report is based upon discussions during a joint meeting between the IGBP Coordinating Panels on Biosphere Aspects of the Hydrological Cycle, on Effects of Climatic Change on Terrestrial Ecosystems and on Global Analysis, Interpretation and Modelling. The objectives were to identify research areas of common interest to the three Panels, to develop a strategy to address these joint issues, and to discuss what actions can be taken by IGBP to explore how different modelling approaches may be synthesized into a system.

Proceedings of the Workshops of the Coordinating Panel on Effects of Global Change on Terrestrial Ecosystems. IGBP Report 11. IGBP, Stockholm, 1990, 105p. ISSN 0284-8015.

This report contains the proceedings of three meetings held in 1989 on (1) a framework for modelling the effects of climate and atmospheric change on terrestrial ecosystems; (2) non-modelling research requirements for understanding, predicting, and monitoring global change; and (3) the impact of global change on agriculture and forestry.

The International Geosphere-Biosphere Programme: A Study of Global Change. The Initial Core Projects. IGBP Report No.12, June 1990. IGBP, Stockholm, 1990, ISSN 0284-8015.

Mankind today is in an unprecedented position. In the span of a single human generation, the Earth's life sustaining environment is expected to change more rapidly than it has over any comparable period of human history. Much of this change will be of our own making. Worldwide economic and technological activities are contributing to rapid and potentially stressful changes in our global environment in ways that we are only now beginning to understand. The effects of these changes may profoundly impact generations to come.

Natural forces have influenced and shaped the environment of our planet over the course of its lifetime. The uniqueness and challenge posed by the changes facing us today lie not only in the magnitude and rate at which these changes are occurring, but also in mankind's ability to inadvertently affect such changes. Increasing atmospheric concentrations of greenhouse gases, due in part to the burning of fossil fuels, may significantly alter our climate. Agriculture, forestry, and other land-use practices, industrial activities, waste disposal, and transportation have altered terrestrial and coastal ocean ecosystems; thus affecting, for example, biological productivity, water resources, and the chemistry of the global atmosphere. These fundamental changes, transcend the traditional boundaries of scientific disciplines and have potential impacts that reach *beyond the domains of individual nations.*

The International Geosphere-Biosphere Programme (IGBP) is an interdisciplinary research endeavour, carried out within the framework of the International Council of Scientific Unions (ICSU), that is focused on a set of key research questions. Along with the World Climate Research Programme (WCRP) and other international research efforts it addresses critical unknowns related to global environmental change.

The IGBP and WCRP are complementary programmes of research that together address the scientific issues of global environmental change. The research focus of the IGBP is on the biogeochemical aspects of global change phenomena, on Earth system modelling and the recovery and interpretation of data dealing with global changes of the past; the WCRP addresses the physical aspects of the climate system.

Within the decade of the 1990s, the IGBP will launch a worldwide research effort, unprecedented in its comprehensive interdisciplinary scope, to address the functioning of the Earth system and to understand how this system is changing. The body of information generated by the IGBP will form the scientific underpinning for predictions relating to future causes and effects of global changes.

While the objective of the IGBP is to understand the interactive processes that regulate the total Earth system, for practical reasons, a suite of Core Projects on the distinct sub-components of the system must be designed. In this context, the IGBP has defined a number of research priority questions, within which core research projects are being developed. Each of these priorities focuses on process linkages where the current state of understanding is insufficient to predict future changes. In addition, consideration of how natural and human forces contribute to global change is included.

The Core Projects described in this report have been developed during many planning meetings held by the IGBP over the past two years where scientists from many nations of the world participated actively. These Core Projects have been designated by the ICSU Special Committee for the IGBP as established, proposed, or potential, reflecting the current status of endorsement by the world scientific community and the state of readiness for implementing them.

Soils play an important role in a number of established proposed or potential Core Projects and this Report should be of interest to many soil scientists.

Terrestrial Biosphere Exchange with Global Atmospheric Chemistry. IGBP report No.13. P.A. Matson and D.S. Ojima, editors. IGBP, Stockholm, 1990, 103p. ISSN 0284-8015.

In IGBP Report 12 a number of priority Core Projects based on several key questions that need to be answered is given. A key question is concerned with the exchange between the terrestrial biosphere and atmospheric chemistry, and is stated as: How is the chemistry of the global atmosphere regulated and what is the role of terrestrial processes in producing and consuming trace gases?

The qualitative understanding regarding basic chemical reactions that transform the many compounds that are brought into the atmosphere, the various processes controlling trace-gas emissions from the biosphere, and the impact of climatic change and changes in land use and industrial activities on the production and consumption of biogenic trace gases have developed rapidly during the past two decades. However, quantitative knowledge of these important atmospheric chemical and biological processes is still very incomplete.

The development of an integrative research project that would alleviate the uncertainty associated with atmospheric chemistry and trace gas exchanges has been undertaken through several initiatives. The International Global Atmospheric Chemistry (IGAC) Project is an IGBP Core Project and in November 1988, a workshop on IGAC proposed an overall framework for a research plan.

This report provides the terrestrial biosphere components to the research agenda proposed by the IGAC workshop. The IGBP Report No.12 sets forth the structure of the research plan for this integrative study of the terrestrial biospheric exchange with the global atmospheric chemistry. This research plan will strengthen and expand the atmospheric chemistry components and incorporate important biosphere studies.

Requests to: IGBP Secretariat, Royal Swedish Academy of Sciences, Box 50005, S-10405 Stockholm, Sweden.

The Heavy Elements: Chemistry, Environmental Impact and Health Effects. J.E. Fergusson. Pergamon Press, Oxford, New York, 1990, vii + 614p. ISBN 0-08-040275-5 (paperback); 0-08-034860-2 (hardback).

It is the intention in this book to provide a broad survey of the heavy elements, their relevant chemistry, environmental impact and health effects. The particular group of ten elements are the heavier members of the p-block elements, which have a number of features in common, as well displaying periodic trends. Hence it is appropriate to consider them together as a coherent group.

It is clear that to understand the environmental and health effects of the chemical elements we need to know more about their chemistry. Unfortunately this chemistry is frequently avoided in lecture courses, because it is claimed to be too complex or too uninteresting. In addition the best understanding is achieved through the involvement of other science disciplines. Whereas significant advances have been made in research, cooperation and teaching, the whole topic of the environmental and health effects of the heavy elements is in its infancy, but growing fast.

The book is divided into four parts. The first is a brief introduction to the criteria used to select the elements, and the history of the discovery and uses of the elements. The second part is on the chemistry of the elements relevant to the rest of the book. In part three the environmental impact of the elements is reviewed. This includes the concentrations in the environment, sources and chemistry. The final section is a brief introduction to the health effects of the heavy elements.

Around 1400 references are included.

Price: paperback £ 27.50 or US$ 45.00; hardback £ 45.00 or US$ 75.00.
Orders to: Pergamon Press, Headington Hill Hall, Oxford OX3 0BW, U.K; *or:* Pergamon Press, Maxwell House, Fairview Park NY 10523, U.S.A.

Agro-ecological Regions of India. NBSS Publ.24. J.L. Sehgal, D.K. Mandal, C. Mandal and S. Vadivelu. National Bureau of Soil Survey & Land Use Planning, Nagpur, 1990, map and explanatory text, 73p. ISBN 81-85460-00-0.

This map at a scale of 1:5 million depicts 21 agro-ecological regions. For each mapping unit is given: major soils, climate, annual precipitation and potential evaporation, water deficit, length of the growing period, major land use and crops grown and extent. All mapping units are described in the explanatory text. A useful publication for India and elsewhere.
Price: US$ 10 (including postage and handling)
Orders to: Documentation Officer, NBSS & LUP, Nagpur 440 010, India.

Sensitivity of Swedish Forest Soils to Acidification Related to Site Characteristics. T. Troedsson. National Swedish Environment Protection Board, Report 3001, 1985, 51p. ISBN 91-620-3001-9. ISSN -282-7298.

In this report small-scale maps of Sweden show the sensitivity of the different soils to acidification, demonstrating that high sensitivity of forest soils mainly exist in the southeast, the middle and the northern part of the country. The causes of the geographical distribution of acidified areas are treated and the relationships between the sensitivity to acidification in lakes, ground water and soils are discussed.
Price: Swedish Kr. 57.60
Orders to: see below.

Soil Acidification, extent, causes and consequences. An evaluation of literature information and current research. M. Berden, S.I. Nilsson, K. Rosén and G. Tyler. National Swedish Environment Protection Board, Report 3292, 1987, 164p.

This report summarizes available information on observed pH/acidity changes in forest soils, analyses their causes and considers recorded or prognosticated consequences for the chemical and biological soil properties. A general conclusion as to the causes of the reported pH or base saturation decreases is that acid deposition is of great importance in many cases. For the pH decreases reported from deeper soil horizons the increased deposition of strong mineral acids seems to play a major role. In many organic topsoils internal proton sources such as solid or dissolved organic acids may be of considerable importance, however. these conclusions are based on empirical data as well as theoretical considerations, including published or calculated proton budgets for whole forest ecosystems.

Assuming an unaltered acid deposition, the authors predict that the most acid forest soils will not undergo any further pH declines. There will be continuously high aluminium concentrations in the soil solution however. Poorly buffered soils which are presently within the cation exchange buffer range will shift to the aluminium buffer range and show declines in pH.

Price: Swedish Kr. 120

Orders to: Naturvardsverket, S-17185 Solna, Sweden.

The Role of Nitrogen in the Acidification of Soils and Surface Waters. Miljørapport 1989:10. J.L. Malanchuk and J. Nilsson, editors. Nordic Council of Ministers, Copenhagen, 1989. ISBN 87-7303-369-3 (Denmark); 91-7996-185-1 (Sweden).

In October 1988, the Nordic Council of Ministers and the U.S. Environmental Protection Agency jointly sponsored a workshop in Copenhagen, Denmark. The purpose of the workshop was to review the state of science on the role of nitrogen in the acidification of soils and surface waters in Europe and North America. This report describes the collaboration of several scientists to summarize and evaluate relevant data from Europe and North America.

Orders to: Nordic Council of Ministers, Store Strandstraede 18, DK-1255 Copenhagen K, Denmark.

Advances in Soil Science. Volume 14. B.A. Stewart, editor. Springer-Verlag, New York, Berlin, 1990, ix + 196p. ISBN 0-387-97193-9 (US ed.), 3-540-97193-9 (German ed.). Hardbound.

This volume covers a variety of subjects: agricultural nitrogen losses to the environment, Ca and Al levels in acid soils, Electron Spin Resonance spectroscopy in soil chemistry, microelectrophoresis applied to clay minerals, and luminescence spectroscopy of colloid-solution interfaces.

Although primarily written for scientists and students of soil science, the series provides technical information to anyone interested in natural resources and man's influence on them.

Price: DM 158

Orders to: Springer-Verlag, Heidelberger Platz 3, D-1000 Berlin 33, Germany; *or:* Springer-Verlag, 175 Fifth Avenue, New York NY 10010, U.S.A.

Moor- und Torfkunde. 3. neubearbeitete Auflage. K. Göttlich, Herausgeber. E. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart, 1990, xvi + 530S., 232 Abb., 63 Tabellen. ISBN 3-510-65139-1. Broschiert.

In unserer immer enger werdenden Zivilisationslandschaft sind unsere Moore Oasen vergleichbar, in denen sich Teile einer Urlandschaft bewahrt haben. Seltene und schöne Pflanzen sind dort erhalten geblieben, und vom Aussterben bedrohten Tierarten, vor allem Vögeln und Kriechtieren, dienen die Moore als Refugium.

Wir können nicht alle diese Gebiete mit Zähnen und Klauen gegen die Ansprüche der Zivilisation verteidigen, wohl aber die schönsten und für die Forschung und Volksbildung wichtigsten. Denn wir brauchen den in den Mooren enthaltenen Rohstoff Torf, um daraus Bodenverbesserungsmittel für unsere Landwirtschaft und den Gartenbau zu gewinnen. Torf wird an hervorragender Stelle in der Balneologie angewandt. Weite Gebiete der Flachland- und Vorgebirgsmoore sind durch bodenkulturelle Maßnahmen in wichtige Areale landwirtschaftlicher Produktion umgewandelt worden.

Die Moore stehen deshalb in der Diskussion zwischen Naturwissenschaft, Balneologie, Medizin, Naturschutz, Gartenbau, Landwirtschaft, Torfgewinnung und -verwertung und Energiewirtschaft.

Nach nur 4 Jahren war die 1. Auflage vergriffen, jetzt erscheint die Moor- und Torfkunde schon in 3. völlig überarbeiteter und erweiterter Auflage. Hinzu kamen nunmehr Beiträge über die 'Moorarchäologie', die 'Physik des Torfes und der Moorböden', die 'Spezielle geoelektrischen Erscheinungen im Moor' und die 'Natürliche Bewaldungstendenz und Mindestpflege von Moorbiotopen'. Der Herausgeber und die 21 Autoren haben das allgemein und weltweit Gültige betont, weil Moore, abgesehen von extremen Breitenlagen, auf der ganzen Erde vorkommen. Nach wie vor beziehen sich aber die mehr auf das Angewandte bezogenen Teile 4 (Stoffliches) und 5 (Nutzung) auf die Bedingungen Mitteleuropas, insbesondere Deutschlands. Den Autoren ist es wieder gelungen, das Phänomen Moor in möglichst vielen Aspekten in gedrängter und für einen großen Leserkreis lesbarer Form darzustellen.

Preis: DM 88.00

Bestellungen an: Schweizerbart'sche Verlagsbuchhandlung, Johannesstrasse 3A, D-7000 Stuttgart, Deutschland.

Soils. An Introduction to Soils and Plant Growth. 6th edition. R.W. Miller and R.L. Donahue. Prentice-Hall International Editions, 1990, 768p. ISBN 0-13-820333-4 (Paperback, not for sale in U.S.A., Mexico and Canada).

This well-known textbook is written for those who want to know about soils and how to use them. It is a basic text relating plant growth to soil properties, with emphasis on agricultural applications, but including other broader uses. the material is organized to be readily understandable by readers without a scientific background, as well as by readers who intend to continue with more advanced soil studies. Students in university or technology programs, farmers, agronomists, environmental scientists, engineers and others can all benefit from the information in this book.

The sixth edition has been comprehensively updated to include new information available since the fifth edition in 1983. There are new chapters on tillage systems and fertilizer management. Extensive rewriting and reorganization has been directed to the chapters on nutrients, soils and environmental pollution, and fertility diagnosis. The list of study questions has been extended.

Price: US$ 35.95

Orders to: Prentice-Hall, 66 Wood Lane End, Hemel Hempstead, Herts. HP2 4RG, England.

Soil Quality in Semiarid Agriculture/Qualité du Sol en Agriculture Semi-aride. 2 Volumes. J.W.B. Stewart, editor. Proceedings published by the Saskatchewan Institute of Pedology, University of Saskatchewan, Saskatoon, 1990, 292p. and 391p. resp. ISBN 0-88880-238-2.

During the past decade there has been increasing concern with the impact of land degradation on the capacity of land to support present and future populations. This is particularly true of the arid and semiarid regions where the greatest relative increase in population is expected to occur. The situation is very serious in developing countries and has been a continuous problem in developed countries since the 1930's.

The key issue is the adoption of soil conservation practices and the knowledge of soil processes to make better management of land. The transfer of this technology from the laboratory to the field has been difficult even in countries where a literate farming community have ready access to written and electronic extension material. In developing countries these difficulties are magnified at all levels. It is in these regions that the greatest population increases are being experienced and where the drain on soil resources is thought to be greatest. Many studies have show that the focus of attention in semiarid lands must be given to resource-poor farmers and to marginal lands. Where technology is available, some of the initiatives are not adopted because economic policies interfere, thus, the necessity of maintaining land quality is not addressed by land owners or managers. There is a need for international agricultural research organizations to allocate more research and resources to the improvement of resource-poor and low input agriculture. There needs to be a sharing of information and strategies of land management. To be effective, implementation strategies have to be developed from a knowledge of the physical, chemical, and biological processes that are involved in the maintenance of soil quality. In addition, the aspirations of the land mangers have to be realized so that they can maintain land quality for future generations. Hence, the reason for this conference. It took place in Saskatoon in June 1989, and was also sponsored by the ISSS.

The central question that was addressed was 'Can the semiarid agroecosystems of the world be managed for productive and sustainable agriculture given the cyclical nature of weather and the intensive use of land?' To address this question, invited speakers gave global overviews of the sustainability of semiarid lands and discussed concepts and policies for maintenance or improvement of farming systems in semiarid regions. Emphasis was placed on development of physical, biological and economic criteria for sustainability and maintenance or improvement of soil quality. This was followed by regional overviews, poster sessions and workshops.

Volume I of the present proceedings contains the Keynote papers and Workshop Reports, Volume II the Local and Regional Concerns about Soil Quality (poster papers).

Orders to: Saskatchewan Institute of Pedology, University of Saskatchewan, Saskatoon, Sask., Canada S7N 0W0.

Degradación y Regeneración del Suelo en Condiciones Ambientales Mediterraneas/Soil Degradation and Rehabilitation in Mediterranean Environmental Conditions. J. Albaladejo, M.A. Stocking and E. Diaz, editors. CSIC, Murcia, 1990, 235p. ISBN 84-00-07045-3.

A seminar was held in Murcia, Spain, in July 1989, with the aim to present the state-of-the-art in matters related to soil degradation and rehabilitation, and to encourage discussion among the participants coming from different institutions. An underlying purpose was to establish priorities in essential research n order to protect and improve soil quality in the Mediterranean environment. This book contains the presentations at the seminar.

After an analysis of the environmental factors affecting soil degradation processes in the region, five chapters relate to rehabilitation possibilities of areas seriously affected by soil degradation. A further aspect discussed as the economic implications of programmes to improve soil quality. Two papers describe case studies. Part of the papers is written in English, part in Spanish, all with summaries in these languages.

Price: US$ 20, plus $ 3 for postage.

Orders to: Centro de Edafología y Biología Aplicada del Segura, Servicio de Publicaciones, Apartado 195, 30080 Murcia, Spain.

Instrumental Surface Analysis of Geologic Materials. D.L. Perry. VCH Publishers, Weinheim, New York, 1990, ix + 373p. ISBN 0-89573-758-2 (VCH Publ., New York), 3-527-27849-4 (VCH Verlagsgesellschaft, Weinheim). Hardcover.

Over the last two decades, the use of sophisticated surface techniques has reemphasized surface chemistry as being an extremely important area of research. Surface chemistry can generally be construed as the chemistry of a material that occurs or exists within the outer few layers of material. The actual depth indicated by the term 'surface' can vary, depending on the interest of the investigator coupled with the instrumental surface technique being employed. This depth, however, ranges from a few angstroms to a micron or more for the common surface instruments that are currently in use.

The purpose of the present book is to provide a good introductory overview of a variety of techniques that can be used to study surface/interface reactions. Knowledge of surface reactions is important in several areas of geochemistry, including mineral dissolution and precipitation (including weathering), elemental partitioning at the mineral/aqueous solution interface, and natural heterogeneous catalytic reactions. These fundamental geochemical processes impact heavily on the applied fields of mineral extraction, ore deposit formation, and toxic waste transport. Toxic waste transport, for example, is a process in which the sorption of heavy metal ions and organic molecules on substrates plays a very important role. So, a book addressing surface chemical phenomena comes at a most critical time with respect to rigorously studying this social/technological issue.

This comprehensive overview of surface chemistry-related analysis of geologic materials, this unique book describes techniques useful for studying chemical reactions on the surfaces of rocks, soils and minerals, Chapters are devoted to Mossbauer, Auger electron, NMR, electron spin resonance and luminescence spectroscopies, scanning electron microscopy, and more.

Price: DM 112

Orders to: or: In North America: VCH Publishers, 220 East 23rd Street, Suite 909, New York, NY 10010, U.S.A. *Elsewhere:* VCH Verlagsgesellschaft, P.O. Box 1260/1280, D-6940 Weinheim, Germany.

Research Management in Agriculture and Natural Resources in the Philippines. Philippine Council for Agriculture, Forestry and Natural Resources Research and Development, Los Baños, Laguna, 1989, 370p.

This publication contains the proceedings of the Workshop on Research Management in Agriculture and Natural Resources in the Philippines, which was held in Tagaytay City in June 1988. It was the first of a series of workshops for the National Agriculture and Resources Research and Development System. During the workshop experts from the national Research and Development system and the International Service for National Agricultural Research (ISNAR) discusses major issues in research management, planning and priority setting in agriculture, forestry and natural resources, and building and managing the national Research and Development network. This publication documents the papers presented.

Orders to: Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), Los Baños, Laguna, Philippines.

Climatic Change and Plant Genetic Resources. M. Jackson, B.V. Ford-Lloyd and M.L. Parry, editors. Belhaven Press, London and New York, 1990, xii + 190p. ISBN 1-85293-102-7. Hardbound.

In 1863, the British scientist John Tyndall published a paper in the *Philosophical Magazine* about the effect of water vapour as a greenhouse gas. In the 1890s, scientists in Sweden and the United States discussed the problems that might result if carbon dioxide concentrations in the atmosphere were to increase through the combustion of coal, and bring about global warming.

There were small increases in average temperatures during the first four decades of this century. It was even suggested that the dustbowl problems of North America during the 1930s were due to the greenhouse effect. Between 1940 and 1970, there was slight cooling, but since 1970 there has once again been a rise in mean global temperatures of about 0.3C.

Estimations of future concentrations in the atmosphere of carbon dioxide and other greenhouse gases released due to human activities, indicate that mean global temperatures will increase by up to 3C by about A.D. 2050, and bring about significant changes in the regional pattern of rainfall.

Until now there has been little consideration of the importance of plant genetic resources during global warming. The Second International Workshop on Plant Genetic Resources, held in Birmingham from 17-18 April 1989 was aimed at redressing this situation. This book includes the papers that were presented as well as a general introduction to plant genetic resources and a summary of the workshop discussions and conclusions. In addition, a chapter was commissioned on the effects of climatic change in the Mediterranean region and Near East, where many of the world's important crops, such as wheat, barley and several legume species, were domesticated.

Price: £ 32.00

Orders to: Belhaven Press, Pinter Publishers, 25 Floral Street, Covent Garden, London WC2E 9DS, England.

Agroforestry for Soil Conservation. ICRAF Science and Practice of Agroforestry 4. A. Young. CAB International and International Council for Research in Agroforestry, 1989, vii + 276p. ISBN 0-85198-648-X (paperback).

Agroforestry covers land use systems in which trees and shrubs are grown in association with herbaceous crops, either in a spatial arrangement or a rotation. It has productive functions, such as the capacity of the tree component to produce fuelwood, fodder and fruit, and service functions, chief among which is that of soil conservation. Soil conservation is treated here in its wider sense, to include both control of erosion and maintenance of fertility. In the current search for sustainability, which involves the combination of production with conservation of the resources on which that production depends, soil conservation plays a major role.

This book is a review of the potential of agroforestry to contribute to soil conservation. Its aims are to summarize the present state of knowledge, including both known capacity and apparent potential, and to indicate the needs for research. The overall conclusion is that appropriate agroforestry systems have the potential to control erosion, maintain soil organic matter and physical properties, and promote efficient nutrient cycling. This applies to a wide range of climatic zones and soil types. There is an urgent need for research to acquire further experimental evidence to support this conclusion. Many obstacles, social and economic as well as technical, need to be overcome if the potential is to be fulfilled. If this effort is successful, then agroforestry can make a major contribution to sustainable land use.

The review is primarily directed at scientists engaged in, or about to embark upon, agroforestry research, particularly those in less-developed countries for whom library facilities and other opportunities for access to recent work are limited. Since interdisciplinary cooperation is essential in agroforestry design, both soil specialists and scientists from other disciplines will be involved.

A second intended audience consists of those concerned with planning agroforestry development in national and international development organizations and aid agencies. For these, the review may help to indicate the degree to which agroforestry has the potential to assist in the solution of problems of soil degradation, the range of agroforestry practices available for this purpose, and how and why they are effective.

Price: £ 14.95 or US$ 27.95

Orders to: CAB International, Wallingford, Oxon OX10 8DE, England.

Effects of Acid Deposition on the Forests of Europe and North America. G.H. Tomlinson. CRC Press, Boca Raton, Ann Arbor, 1990, xii + 281p. ISBN 0-8493-4720-3.

Forest declines are not new phenomena and reports of decline go back many centuries. It has been observed that a decline could occur naturally or could result from mismanagement, that it had the appearance of early senescence and that it might occur cohort-like with a single species and/or in a single area. However, the cause/effect relationships leading to die-backs had not, until recently, been explained. The fact that forest decline often followed warm and dry years was taken as proof that water deficiency was the cause, but the hypothesis was not tested by measurement of relevant data.

The current 'new type' of forest decline is characterized by the remarkable manifestation of the die-back of dominant trees subsequently spreading to virtually all species and tree ages in many of the areas affected. Until the appearance of theses characteristic symptoms, the research resulted i a description of the symptoms, and a discussion of possible causes, but did not give a reasoned explanation of the processes involved. A scientific explanation requires a knowledge of how a change in the environment of the forest ecosystem (e.g., climate or air pollutants) or in the ecosystem itself (e.g., by management) affects the components of the ecosystem (soil, plants, animals, microorganisms) and how these factors affect the tree. This knowledge did not exist 10 years ago. Forest decline at that time was still unexplained, whether it occurred naturally or was triggered by anthropogenic influences on the forest ecosystem.

During the last 10 years, it became apparent that the deposition of anthropogenic air pollutants on forest ecosystems is, and from the beginning of industrialization has been, a large-scale phenomenon, important not only in industrialized centers, but also in remote forested areas. The fact that acidic air pollutants cause serious soil acidification was the basis for the forecast that acid deposition would result in forest decline and this forecast has induced considerable research efforts. Though directed to a specific environmental factor, i.e., air pollutants, this research became an important contribution to the knowledge of forest decline.

This book introduces the reader to the results of the research achieved to the present time. Detailed cause/effect relationships are presented, starting with a change in the chemical state of the soil. Such a change can be caused by ecosystem internal processes or by acid deposition, with the combination being particularly damaging. The actual studies represent fundamental forest ecosystem research. It is well established, however, that acid deposition has been the dominating driving force during recent decades. The knowledge gained, until the present, permits an assessment of the stress that the forecasted global warming may create on forest ecosystems through changes in biochemical processes taking place in the soil.

Price: £ 128.00

Orders to: Wolfe Publishing, Brook House, 2-16 Torrington Place, London WC1E 7LT, England; **or:** CRC Press, 2000 Corporate Blvd. N.W., Boca Raton, FL 33431, U.S.A.

Analyse des Sols, Roches et Ciments. Méthodes Choisies. I.A. Voïnovitch. Masson, Paris, Milan, 1988, xv + 445p. ISBN 2-225-81400-7. Relié.

L'Analyse des Silicates, éditée en novembre 1962, puis sa traduction en anglais de 1967 sont épuisées. Dans cet ouvrage, nous avions réuni des méthodes chimiques et physiques appliquées aux dosages de nombreux éléments, présents à différentes teneurs, dans une large gamme de matières premières et de produits manufacturés par les industries céramiques, réfractaires, électro-techniques, etc.

A côté des techniques classiques, des méthodes complexométriques relativement nouvelles pour l'époque ou celles utilisant la spectrophotométrie de flamme, ont été proposées.

Une large part du livre a été consacrée à la théorie et à l'application de la spectrographie d'émission dans les arcs, ainsi qu'à l'analyse de traces d'éléments dans différentes matrices et à celle des éléments majeurs dans les argiles et les réfractaires silico-alumineux.

La spectrométrie d'absorption atomique étant alors à ses débuts, nous y avons consacré peu de pages; par contre, la spectrométrie de fluorescence X (SFX) a fait l'objet d'une description des Principes et d'une technique opératoire. Une attention particulière a été réservée au problème de l'attaque et de la mise en solution des silicates par voie sèche (fusion) et humide (attaques acides).

Prix: FF 620.

Commandes à: Masson, 120 bd Saint-Germain, F-75280 Paris Cedex 06, France; **or:** Maison du Livre Spécialisé, B.P. 36, 41353 Vineuil Cedex, France.

Impact of Carbon Dioxide, Trace Gases, and Climate Change on Global Agriculture. ASA Special Publication Number 53. B.A. Kimball, editorial committee chairman. American Society of Agronomy, Crop Science Society of America and Soil Science Society of America, 1990, 133p. ISBN 0-89118-103-2.

Global climate change is one of several important issues that will command the attention of policymakers and scientists in the 1990s. The evidence that concentrations of carbon dioxide (CO_2) and other gases are increasing in the atmosphere is irrefutable. This evidence, and the knowledge that CO_2 and trace gases may absorb thermal radiation sufficient to warm the atmosphere, has prompted much speculation that ensuing atmospheric warming may lead to changes in the distribution of precipitation, and of crop adaptation and productivity, that would alter the world supply and of the natural resources that are used to produce food. Agronomists have a pivotal role in conducting the research needed to anticipate crop response to climate change, and in informing policymakers and the general public about the adequacy of our knowledge.

In this publication, leading scientists assess the current status of scientific knowledge about the putative role of greenhouse gases in global climate change and report their findings. The information will be useful not only to scientists, but also to policymakers as background for deliberation on farm, environmental, and agricultural research legislation.

Price: US$ 15.00, plus $ 1.50 for orders from outside USA.

Orders to: ASA, CSSA, SSSA Headquarters Office, Book Order Dept., 677 South Segoe Road, Madison WI 53711, U.S.A.

Bibliography of Soil Science in New Zealand up to 1957. Occasional Paper 14, 1990, Dept. of Soil Science, University of Waikato, Hamilton. R.F. Allbrook. Univ. of Waikato, Hamilton, 1990, 99p. ISSN 0110-0947.

This bibliography contains 381 entries, partly annotated, in chronological order of publications. An index of authors and a subject index are also included. After 1938 papers published by the Soil Bureau are generally not included, as these have already been contained in N.Z. Soil Bureau Bibliographic Report 15 of 1974.

Price: NZ$ 10

Orders to: The Secretary, Earth Science, Waikato University, P.O. Box 3105, Hamilton, New Zealand.

Agriculture and Fertilizers. O.Chr. Bøckman, O. Kaarstad, O.H. Lie and I. Richards. Norsk Hydro, Oslo, 1990, 245p. ISBN 82-90861-01-X.

The intention of this book is to give a survey of environmental issues relating to agriculture and fertilizer use, with an outline of present conflicts of opinion and the status of knowledge.

Fertilizers, what they are and how they are used, are described in Chapter 1. The main challenges to agriculture – to feed the present and future generations while caring for our common environment – are outlined in Chapter 2. Some knowledge of the past is useful in understanding the present. A description of the developments in European agriculture after the Second World War is given in Chapter 3. The issues relating to fertilizer use in conventional or current agriculture are discussed in more detail in Chapter 4. Various alternatives to current agricultural practices are being proposed. Alternative agriculture should be examined in the same critical manner as current agriculture. This is the subject of Chapter 5. The authors' own reflections after having completed this book are also given.

The book is intended for anybody with an interest in agriculture and the environment. Some familiarity with science and environmental topics would facilitate the reading.

Requests to: Norsk Hydro, Agricultural Group, Bygdøy Allé 2, N-0240 Oslo 2, Norway.

New Publications from FAO/Nouvelles Publications de la FAO/Neue Veroffentlichungen von FAO

Evaluación de Tierras para la Agricultural en Regadio: Directivas. Boletin de Suelos de la FAO 55. Organización de las N.U. para la Agricultura y la Alimentación, Roma, 1990, xvii + 289p. ISBN 92-5-302243-4.

El presente boletín está escrito para todos los que se ocupan de evaluación de tierras o planificatión de proyectos de riego y se divide en dos partes. En la Primera, se explican los procedimientos recomendados para la evaluación de las tierras y su clasificación según su aptitud para la agricultura bajo riego, con base en el Esquema de la FAO para la Evaluación de Tierras (1976). La Segunda Parte provee información técnica sobre factores individuales que revisten importancia para la definición de límites críticos en la clasificación de aptitud de las tierras. El boletín puede ser utilizado como referencia general, por ejemplo, como una fuente de verificación o más específicamente como una guía detallada sobre procedimientos e información técnica.

En el Cuadro 1 de la Primera Parte se presenta la estructura de la clasificación del Esquema de la FAO sobre aptitud de la tierra, que se describe con detalles en el Apéndice 1. En el Boletín de Suelos de la FAO n°32 se proporcionan detalles adicionales.

La Segunda Parte provee una orientación técnica sobre los elementos que se suelen emplear para determinar la clase de aptitud de tierras y para fijar los límites críticos que ayden a elegir las clases de aptitud de las mismas. El análisis se centra en los distintos elementos y sus interacciones, que pueden afectar los rendimientos de los cultivos, o producción, manejo, costos de desarrollo de tierras, conservación y medio ambiente, y las condiciones socioeconómicas.

El lector debe utilizar esta Directivas con criterio selectivo, pues no todos los elementos aquí enumerados serán de interés para una determinada evaluación. El procedimiento ayuda a escoger las consideraciones que merecen especial interés con objeto de evitar estudios inútiles y gastos innecesarios. El procedimiento de evaluación es básico y esencial para la planificación de proyectos y debe llevarse a cabo de forma tal que minimice los costos, aunque a un nivel que permita la obtención de recomendaciones viables.

Conservation des Sols et des Eaux dans les Zones Semi-arides. Bulletin Pédologique de la FAO 57. N.W. Hudson, version française adaptée par E. Roose. Organisation des N.U. pour l'Alimentation et l'Agriculture, Rome ,1990, xvii + 182p. ISBN 92-5-202946-X.

Depuis de nombreuses années, la FAO s'intéresse au développement, à l'aménagement et à la conservation des ressources en terre. Ces dernières années, les régions semi-arides du monde ont fait l'objet d'une attention particulière. Cette attention a été largement provoquée par les sécheresses et les famines des années 1970 et 1980. Dans les zones semi-arides africaines, elles ont touché de vastes régions et des millions de personnes.

Que peut-on entreprendre afin d'éviter le renouvellement de telles catastrophes? Il ne peut y avoir de réponse simple à cette question, tant qu'un grand nombre de problèmes techniques, économiques, sociaux et politiques ne seront pas étudiés et résolus. Cependant, chacun sait que les sécheresses sont la conséquence globale de phénomènes naturels dans les régions semi-arides. Cela s'est souvent produit par le passé et se reproduira encore dans l'avenir. Nous savons aujourd'hui que les terribles effets des dernières sécheresses ont été aggravés par l'érosion et d'autres formes de dégradation des sols qui se sont développées au fil des ans, dans les régions semi-arides à cause d'une gestion inadaptée et d'une mauvaise utilisation des terres. La dégradation du sol et de la végétation aggrave la situation en période de sécheresse. Mais l'érosion des sols peut être maîtrisée et la fertilité peut être restaurée jusqu'à atteindre un niveau de productivité satisfaisant si des techniques d'aménagement appropriées sont appliquées.

Toutes les techniques de conservation des sols dans les zones semi-arides ne peuvent être citées dans une si brève publication, même si elles sont connues. Plus précisément, les besoins varient selon les régions en fonction de la végétation, des sols, du climat et des besoins des hommes. Par conséquent, l'objectif de cette étude est de présenter des méthodes et des techniques qui ont déjà été testées et qui se sont révélées efficaces dans certaines régions du globe où le manque de précipitations est un problème majeur. Nous pensons que plusieurs de ces méthodes pourraient être largement étendues à des régions à problèmes similaires. Enfin, nous espérons que ce bulletin servira de guide et de référence aux planificateurs et techniciens travaillant dans les zones semi-arides à la recherche de solutions à adapter et à développer dans leurs efforts pour contrôler la dégradation des terres et pour introduire des systèmes agricoles productifs et équilibrés.

Micronutrient Assessment at the Country Level: an International Study. M. Sillanpää. FAO Soils Bulletin 63. Published by FAO in cooperation with FINNIDA. FAO, Rome, 1990, 208p. ISBN 92-5-102955-5.

The project 'Micronutrient Assessment at Country Level', the results of which are reported in this document, is a direct follow-up to another project called 'Trace Element Study', the results of which were reported in FAO Soils Bulletin No. 48, 1982.

The results of the previous project provided guidelines for the activities of the new project. Accordingly, fifteen of the thirty countries involved in the previous project were invited to participate in the present project. The countries were selected on the basis of the expected severity or extent of micronutrient problems. With the exception of Finland, the donor country, the participants were developing countries.

Although the results of the 'Trace Element Study' gave a good overall picture of the micronutrient status in the countries involved and indicated areas where micronutrient problems could be expected, they did

not provide quantitative data on the effects on yields of different crops. Therefore, the main objective of the new project was to quantify the effects of various micronutrients on yields, especially on those of the economically important food and cash crops.

The implementation of the project was based on field trials in which both plants and soils were analyzed. Each participating country nominated an Institute and a Head Cooperator to be responsible for the project activities in the country concerned.

In October 1982 a Consultation was organized in Rome for briefing the Head Cooperators in project activities. During the Consultation the establishment and layout of micronutrient trials for various conditions and instructions for carrying out the field programmes were discussed in detail. These included selection of trial sites, determination of the number of trials for each country, selection of test crops, plant and soil sampling, preparation of seed bed, fertilization, obtaining and recording yield and other relevant data.

Micronutrient fertilizers specially 'tailored' for the layout of the planned trials in respect of nutrient contents, combinations and amounts were manufactured. The fertilizers, together with plant and soil sample bags were shipped to the participating countries. The soil and crop samples from all trials were sent to Finland and analyzed in the laboratory of the Institute of Soil Science, Agricultural Research Centre of Finland.

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Soil Biochemistry. Volume 6. J.M. Bollag and G. Stotzky, editors. Marcel Dekker, New York and Basel, 1990, x + 565p. ISBN 0-8247-8232-1. Hardbound.

It has been almost ten years since the publication of the last volume in this series. This interim has been unfortunate, as there have been many exciting advances, as well as increasing interest, in the broadly termed field of soil biochemistry, which is a continually evolving discipline steadily gaining importance with the recognition of the prominent role of biochemical processes in the maintenance of the soil environment. Mounting evidence about the potential applications of these processes in environmental biotechnology has resulted in a strong desire for more knowledge about soil biochemistry and, specifically, the activity of microorganisms in soil. The horizons of soil biochemistry have been vastly broadened in the past few years from their origins in agronomy.

Soil microorganisms have a variety of beneficial roles in soil. For example, they are essential agents in soil formation and in the promotion of soil fertility. In addition, soil microorganisms and their enzymes are becoming prime candidates as alternative methods of pollution control as recent studies indicate their utility in the detoxification of pesticides, oil spills, nitrates, and heavy metals in soil and water. Moreover, the use of microorganisms and their products as control agents of both insects and pathogenic microorganisms is increasingly being considered as an alternative to chemical control agents.

In addition to the environmental applications of data obtained, it is obvious that the principles established by studies in soil biochemistry can also be applied to the treatment of soil to improve agricultural productivity. For these reasons alone, soil biochemistry is of great interest to scientists from many fields including, but not limited to, agronomy, forestry, horticulture, plant pathology, pedology, and environmental science.

Soil biochemistry is interdisciplinary and, as any legitimate field of inquiry, transcends national boundaries, as indicated by the contributors to this volume. Following the pattern established in earlier volumes, the topics in this volume are diverse and emphasize again the multidisciplinary nature of soil biochemistry.
Price: In U.S.A. and Canada US$ 150.00; *Elsewhere:* US$ 180.00.
Orders to: Marcel Dekker Inc., 270 Madison Avenue, New York NY 10016, U.S.A.

Géochimie et Pétrographie des Bauxites Latéritiques d'Amazonie Brésilienne. Comparaison avec l'Afrique, l'Inde et l'Australie. B. Kobilsek, Thèse de doctorat, Université Louis Pasteur de Strasbourg, France, 1990, 201p.

Cette étude correspond à une présentation des facteurs pouvant intervenir dans les processus de latéritisation, fondée à la fois sur une étude de terrain et sur une revue bibliographique.

La première partie de ce travail est consacrée à l'étude géochimique et pétrographique de deux types de latosols développés aux dépens d'un sédiment sablo-argileux, en Amazonie brésilienne. Dans les deux sites, on montre que la différenciation de ces sols s'est faite en place. Si des épisodes sédimentaires se sont produits au cours de leur genèse, ils ont été totalement effacés par l'évolution géochimique ultérieure.

Dans la deuxième partie on se propose d'étudier l'influence de l'évolution paléoclimatique, depuis 150 millions d'années, sur la distribution géographique des cuirasses ferrugineuses et sur les variations de composition minéralogique des bauxites, en Afrique, en Amérique du Sud, en Inde et en Australie.

Les bauxites latéritiques et les cuirasses ferrugineuses, formées respectivement en climat équatorial ou tropical humide et en climat tropical à saisons contrastées, se distribuent sur de vastes superficies dépassant largement les limites de la zone intertropicale actuelle.
Commandes à: Institut de Géologie, Université Louis Pasteur, 1, rue Blessig, 67084 Strasbourg Cedex, France.

Earth Science Mapping for Planning, Development and Conservation. J. McCall and B. Marker, editors. Graham & Trotman, London, Dordrecht, 1989, x + 268p. ISBN 0-86010-989-5. Hardback.

The modern world is faced with a rapidly increasing demand on the Earth's most valuable resources, such as water and minerals. Intensifying use and re-use of land may expose populations to hazards such as land instability, flooding and volcanic eruptions. Erosion and sedimentation on low-lying coastal areas, in which a high proportion of the World's population lives, may increase in importance if a predicted rise in sea-level occurs. Human activity may introduce major hazards.

Planning of land-use and development assists in ensuring and conserving supplies of Earth resources, and in taking due precautions against hazards. Over the last 20 years environmental geology has played an increasing part in assisting safe, cost-effective planning and development.

Environmental or *Applied Geology* maps are an important means of communicating the necessary Earth Science background information to administrators and decision makers. This volume gives a convenient review of the current state of Applied Earth Science Mapping. Sections are devoted to mapping techniques, data handling, water, minerals, soils, hazards, construction, the interface with other types of mapping, and future trends. Each section has an introduction which gives enough background for non-specialists to appreciate the content, whilst there is still much in the book of interest to subject specialists.

The topics treated are related by common factors and thus some overlap of the chapters has been incorporated to allow them to be free-standing as well as contributory to the whole review.

Price: Dfl 310, US$ 124 or £ 80.

Orders to: In U.S.A. and Canada: Kluwer Academic Publishers, 101 Philip Drive, Norwell, MA 02061, U.S.A. *Elsewhere:* Kluwer Academic Publishers Group, P.O. Box 322, 3300 AH Dordrecht, The Netherlands.

FAO-ISRIC Soil Database (SDB). World Soil Resources Report 64. FAO, Rome, 1990, 89p. and diskette. ISBN 92-5-102924-5.

This is the first 'trial' version of the FAO-ISRIC Soil Database, a user-friendly tool to facilitate the organization, storage and retrieval of basic soil dat on a micro-computer. The present system is an FAO enhancement of a soil database originally developed by the International Soil Reference and Information Centre (ISRIC), subsequently adapted to Botswana conditions and then rewritten for universal use. Soil surveys generate large quantities of data: field description as well as laboratory data. Commonly their potentials to generate useful information are exploited to only a minimal extent because of the data handling limitations of manual methods of analysis and condensation of voluminous data recorded on written documents.

By enabling the storage and retrieval of soil profile data in quick, efficient and systematic way the soil database can enhance the exploitations of soil survey data for various purposes. In particular, it can ease the flow of such data into computerized land evaluation systems, land resource based geographic information systems (GIS) and simulation models, and programs to provide interfaces for such uses will be added to future editions. The FAO-ISRIC database is flexible in its use and its hardware requirements.

The coding system used in the database follows the draft version of the revised FAO Guidelines for Sol Profile Descriptions (1989). A variable system of coding field dat is used to facilitate adaptations to local conditions. The database runs on IBM compatible micro-computers and was prepared using the database management programme dBASE. However the user does not need dBASE on the computer to operate the database as a compiled version of the database as a compiled version of the database is also provided with this manual.

The FAO-ISRIC soil database is still in the process of development. This version contains all necessary procedures for its expansion. Future developments will include extension of databases and customized interfaces to GIS and computerized land evaluation systems.

Requests to: Chief, AGLS, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy.

Publications of the International Research and Development Centers: 1989 Edition. International Rice Research Institute, Los Baños, 1989, 732p. ISBN 971-104-216-9.

This compilation contains all publications and educational materials of the 22 International Agricultural Research Centers. It is the largest compilation of titles on agricultural science for development. Included is a 182-page keyword index to help the reader locate all publications in certain fields.

Price: US$ 10, plus $ 3 for surface mail.

Orders to: see below.

Publications of the International Research and Development Centers: 1990 Supplement. International Rice Research Institute, Los Baños, 1990, 332p. ISBN 971-104-226-6.

This catalog includes only new titles, that are not in the 1989 issue. The two books are the only compilations of major Center publications.

Price: US$ 6, plus $ 1 for surface mail, or $ 5 for airmail.

Orders to: Division H, Information Center, IRRI, P.O. Box 933, 1099 Manila, Philippines.

Les États de Surface de la Zone Sahélienne. Influence sur l'Infiltration. A. Casenave et Chr. Valentin. ORSTOM, Paris, 1989, 229p. ISBN 2-7099-0984-7.

L'importance des problèmes liés à l'utilisation de l'eau dans la zone sahélienne a entraîné, depuis une dizaine d'années, le développement des études sous pluie simulée. Elles ont permis de déterminer les facteurs conditionnels de l'infiltration et du ruissellement sur une vaste zone géographique et de hiérarchiser l'importance relative de ces différents facteurs. C'est ainsi que s'est manifesté, en zone sahélienne, le rôle prépondérant des caractéristiques de surface de l'infiltrabilité, au premier rang desquelles se classent le couvert végétal, l'activité faunique, le microrelief et le type de croûte.

L'étude des processus et l'analyse des facteurs réorganisation superficielle, associée à la description des microhorizons, aboutit à la définition d'une typologie morpho-génétique des principales surfaces élémentaires. A chacune, correspond un comportement hydrodynamique particulier, caractérisé par un certain nombre de paramètres de l'infiltration et du ruissellement.

A une échelle supérieure, la combinaison de ces surfaces élémentaires mène à la définition du concept d'état de surface, base d'une méthode cartographique originale. Celle-ci fait appel à un système normalisé de description du milieu. Les unités, ainsi définies, répondent à des critères d'homogénéité tant au niveau de leur dynamique évolutive qu'à celui de leur fonctionnement hydrologique. En zone sahélienne, la conjugaison des études sous pluie simulée, de la télédétection et d'une modélisation à petits pas de temps constitue un outil performant pour la simulation des écoulements, la prédétermination des crues de fréquence rare, et la transposition des résultats à un bassin non observé.

La typologie des surfaces élémentaires peut être utilisée pour le diagnostic de l'état de dégradation des milieux sahéliens. De surcroît, son caractère génétique permet de prévoir leur évolution sous les effets conjugués de la sécheresse et de la surexploitation par l'homme.

Commandes à: Editions de l'ORSTOM, 70 route d'Aulnay, F-93143 Bondy Cedex, France.

Bodengesellschaften des Vorderen Orients. R. Straub. Beihefter zum Tübinger Atlas des Vorderen Orients A16. L. Reichert Verlag, Wiesbaden, 1988, 106p.

Vorderer Orient. Böden. 1:8 Mill. R. Straub. TAVO karten-Blatt AII6. L. Reichert Verlag, Wiesbaden.

Judging from the title of the book, I expected to find a description of the soils of the Near East. Although distributed separately in the TAVO Series of Supplements, it is in fact the explanatory text for the separately published 1:8 million *soil association map* of the Near East, included in the Tübingen Atlas of the Near East (TAVO). The 106 pages booklet does not provide any factual information on the soil associations but only on the 19 large soil regions into which the Near East is divided, devoting about half a page to each region. Another section contains a country by country summary of the background material available and used, and a detailed list of references, which is probably the most valuable part of the booklet.

A slightly modified FAO/Unesco soil nomenclature scheme (in German and English) is used on the soil map and a correlation with other soil classification systems is provided in the booklet. The total area of the map is 7.8 million km^2, which is comparable with the equally dry continent of Australia (7.7 km^2). The new 1:8 million soil map follows in general outline the FAO/Unesco Soil Map of the World (1:5M) but many soil boundaries units vary in detail. The colour pattern of the 34 major soil units – and the additional subunits marked by different associated soils, texture or slope class, as listed in the accompanying table – were selected well, displaying clearly both the Fertile Crescent and Nile Valley regions. Also well displayed is the areal of Lithosol complexes, associated with various other soil units, and what is probably the largest contiguous area of the salt-affected soils in the Mesopotamian Plain.

However, since the smallest delineation on such a soil map represent about 500 km^2, it cannot give but a rough indication of the soil resources or of its potential. The author has field experience from Yemen, where he was concerned with the effect of man on the soil landscape. This prompted him to redefine an anthropic epipedon and an anthropic solum, which are repeated in the booklet. Yet we are not even told that only 9% of the Near East land area is arable soil, mostly under irrigation (compared to 6% in Australia, with a possibility of expansion to 10%). The absence of any such or other quantitative data on the soils or on land use in the booklet is to be regretted. Continuing the comparison with Australia, which in many respects is possible, the most significant difference is that while the total area and arable percentages are similar, the Near East population is 15 times that of Australia and growing faster. In both regions the soil resources have been studied and mapped with uneven intensities, leaving still much to be explored.

D.H. Yaalon, Jerusalem, Israel

Orders to: ILH-Geocenter, P.O. Box 800830, D-7000 Stuttgart, Germany

Stratégies Scientifiques et Développement: Sols et Agriculture des Régions Chaudes. Y. Chatelin and R. Arvanitis. ORSTOM, Paris, 1988, 143p.

Quantitative studies on the pattern of publications in soil science are few only. The book by Chatelin of ORSTOM France and Arvanitis from Venezuela is thus a welcome addition, both on Third World soil science and to the field of bibliometrics. Essentially the authors attempted to characterize the pattern of soil studies relevant to the tropics, both wet and dry tropics, as mirrored by the publications in this field.

Their database were 2040 annotated publications listed in two volumes of the French Bulletin Signalétique for 1983. The 2040 notations relevant to the tropics represent 21.7% of the total world publications on soils and related topics, including geomorphology and soil fertility amendments. The total (N=9398) is about similar to the total number of publications abstracted annually in Soils and Fertilizers. Three quarters of the publications are in English, or less than the ≈O90% in the mainstream science publications.

The major finding is that half (51%) of the total soil publications related to the tropics actually originate in the developing countries of the tropics themselves, with India and Brazil as leader. Most of Brazilian research is published locally in Portuguese, while more of Indian research is published in the mainstream journals in English. It is usually assumed that Third World countries produce about 5% of the world science publications, and up to 10% in certain topics. But it is evident from this study that when it comes to studies related to sols and their management, the local Third World contribution is much more significant. Another 26% is contributed by the developed 'periphery' countries (Australia, New Zealand, Israel, South Africa) whose research input relative to population or GNP is generally high and specialization into specific topics evident. The remaining 23% are contributed by northern countries. Proportionally the research emphasis in the tropics is highest in the strongly researched fields of soil fertility, soil chemistry and water relations, and surprisingly also in soil microbiology.

On a personal note, it is pleasant to observe that conclusions reached by me some 20 years ago in studies from the worldwide CAB database[1] are supported by Chatelin and Arvanitis. There is indeed a strong national and regional characteristic in the subjects chosen for soil research. Australia with New Zealand still produce a proportionally large amount of soil publications.

A chapter in the book is devoted to a cluster analysis of key words and another to the publication trends of ORSTOM pedologists who work for or in developing countries of the tropics. A large proportion (57%) of their output is in non-conventional (mimeographed) publications, presumably addressed to local use. Only 21% of the ORSTOM output is published in journals and books, mostly in French, while international contacts are maintained by a large proportion (10%) of communications to congresses.

More useful information is hidden in the various bibliographic databases. Let us hope that other analyses will follow.

D.H. Yaalon, Jerusalem, Israel

[1] D.H. Yaalon, 1964. Has soil research national characteristics? Soils and Fertilizers, 27:89-93

Orders to: Editions de l'ORSTOM, 70 route d'Aulnay, F-93143 Bondy Cedex, France.

Sustainable Agricultural Systems. C.A. Edwards, R. Lal, P. Madden, R.H. Miller and G. House, editors. Soil and Water Conservation Society, Ankeny, 1990, xvi + 696p. ISBN 0-935734-21-X. Hardbound.

The topic of agricultural sustainability is a high priority in all countries around the earth. There is no more important question before us on this globe today than that of the sustainability of agricultural systems. Desertification, deforestation, and accumulation of chemicals in soils and waters are of increasing concern in many ecosystems and different parts of the world. One can find a growing number of such citations in both scientific and popular publications, to the degree that not only scientists but also the general public are raising serious questions about the current state of affairs and potential alternatives for the future. There is an urgent need for research and education on farming systems that can increase productivity and profits without having adverse effects on the environment and ultimately our future survival.

The present book is the outcome of the International Conference on Sustainable Agriculture Systems, held at Columbus, Ohio, in September 1988. The conference included 38 formal presentations, which from the contents of this book, and 40 poster presentations, some of which are published elsewhere. The contributions provide insight into these research and education needs and the many points of view that come to bear on the issue of sustainability. Covered in a comprehensive fashion are the economic and environmental aspects of sustainability and what steps can be taken to successfully establish sustainable farming systems. The history of the sustainable agricultural movement, the goals of international research centres working on sustainable agriculture, and the improved ecological impacts of that research are analyzed as well.

It is essential reading for agricultural researchers, extension workers, natural resource conservationists, policy-makers, and other interested in creating an economically and environmentally sustainable agricultural industry worldwide.

Price: US$ 40, postpaid (US$ 36 for SWCS members).

Orders to: Soil and Water Conservation Society, 7515 Northeast Ankeny Road, Ankeny, Iowa 50021-9764, U.S.A.

Natural Resource Conservation. An Ecological Approach. Fifth edition. O.S. Owen and D.D. Chiras. Macmillan Publ. Comp., New York and Collier Macmillan Publ., London, 1990, xiii + 538p. ISBN 0-02-390111-X. Hardbound.

This book is written for the introductory resource conservation course. The first edition of this book was published a year after the first Earth Day in 1970. To many observers, Earth Day marked the beginning of the formal environmental movement in the United States. Since that time, impressive gains have been made in air and water pollution control and species protection.

Despite this progress, many environmental problems still remain. Many others have actually grown worse. For instance, species extinction continues. Added to the list of growing problems are a whole host of new ones that have cropped up along the way, such as ground water pollution, ozone depletion, global warming, and growing mountains of urban trash.

This book describes many important principles of ecology and resource management, concepts that will prove useful throughout a student's life. It also outlines many environmental problems and offers a variety of solutions. These solutions take three basic forms: legislative (new laws and regulations), technological (applying existing, new, and improved technologies), and methodological (changing our methods). The authors think that individuals, educators, business people, and government officials all have an important role to play in solving the environmental crisis and in building a sustainable society.

Orders to: see below

The Nature and Properties of Soils. Tenth edition. N.C. Brady. Macmillan Publ. Comp., New York and Collier Macmillan Publ., London, 1990, xv + 621p. ISBN 0-02-313361-9. Hardbound.

People are dependent on soils, and, conversely, good soils are dependant on people and the use they make of the land. Soils are the natural bodies on which plants grow. They provide the starting point for successful agriculture.

Soils also have other meanings for humankind. They underlie the foundations of houses and factories and determine whether these foundations are adequate. They are the beds for roads and highways and influence the length of life of these arteries. Soils are used to absorb wastes from sewage systems, wastes from other municipal, industrial, and animal sources.

Today's headlines focus on two major international problems: widespread hunger and malnutrition, and the deterioration of the quality of the environment resulting from attempts to alleviate this hunger and malnutrition. The quality, management, and conservation of the world's soils are critical elements in each of these problems as well as in their solution.

Soil productivity helps determine how much food and fiber can be provided for the world's ever-increasing human population. Some soils are naturally productive, others are not. Some respond to wise cultural management and can be made more productive. Others will not so respond and could best be left in their native state with natural grass of forest vegetation. In any case, however, without some knowledge of the nature and properties of soils, it is not possible to predict soil quality in a given area or to know how soils should be managed and conserved.

Soils can affect and are affect by environmental deterioration. They can be degraded and even destroyed by excessive soil erosion. Downstream dwellers suffer the consequences of this erosion through the silting of their reservoirs, lakes, and rivers. Soils are also increasingly being used a sites for the disposal of animal, human, and industrial wastes. Knowledge of soil properties is essential to minimize soil erosion and to maximize the safe use of soils as waste disposal recipients.

As were previous editions of this text, the tenth edition is designed to help students understand soils, and to gain a general knowledge of their properties and usefulness. This tenth edition has been thoroughly revised and brought up to date. Recent changes in the American soil classification system, Soil Taxonomy, have been incorporated.

To help both instructors and students, about a dozen study questions have been added for each chapter. These questions focus on practical problems and opportunities, and emphasize the real life nature of soil management problems.

Orders to: Macmillan Publ. Comp., 866 Third Avenue, New York NY 10022.

Theory and Applications of Optical Remote Sensing. G. Asrar, editor. John Wiley & Sons, Chichester, New York, 1989, xiv + 734p. ISBN 0-471-62895-6. Hardbound.

Recent strides in remote sensing have shown the increasing applicability of this field to a wide range of scientific disciplines. However, most books published either emphasize the basic principles using a limited number of examples, or cover only those topics of interest to a particular discipline or group of readers without considering the applications of the subject area in its larger context. The broad and far reaching applications of remote sensing do need to be considered across all scientific disciplines so that readers can obtain enough data to answer basic questions, like how remotely sensed data are obtained, what the factors affecting such measurements are, and how these data can be used effectively by the scientific community.

The present book treats optical remote sensing by presenting measurements, modelling, and applications of reflected visible to middle infrared and emitted thermal infrared energy in different disciplines, including agriculture, ecology, geology, geography, and hydrology. The main objective is to provide an understanding of the underlying principles, recent developments, and future directions for research activities in these subject areas and give readers the ability to examine basic information and applications of remote sensing as they relate to other disciplines.

Each chapter is self-contained with illustrative figures and tables included to explain the principles and applications presented. Among the topics covered are: field measurements of bi-directional reflectance; soil influences on remotely-sensed vegetation canopy spectra; vegetation canopy reflectance and biophysical processes; applications in forest science and management; applications to coastal wetlands vegetation; and knowledge-based spectral classification of remotely-sensed image data.

Orders to: see below

Vegetation and Erosion. Processes and Environments. J.B. Thornes, editor. John Wiley & Sons, Chichester, New York, 1990, xvii + 517p. ISBN 0-471-92630-2. Hardbound.

This book appears at a time of unprecedented interest and concern in the enviornment and at a time of rapid change in earth and environmental sciences. The political pressure to understand the impact of anthropogenic activity, coupled with an injection of financial resources, could achieve more in a few years than has been achieved in decades of scientific endeavour in the poorly funded and hitherto unglamorous backwaters of science. Two of the most pressing issues are transformation of the troposphere and stratosphere though so-called 'greenhouse gases' and transformation of the surface and its agricultural productivity through so-called 'desertification'.

Two major research questions are involved. The first seeks to establish the processes by which such change is being brought about. The second asks the extent to whic hsuch changes are part of the natural state of affairs as revealed by the history of past changes. Both the isseus and both of the research questions have been traditional concerns of geomorphologists. Climate provides the driving agents of geomorphic processes and climatic change resutls in changes in the magnitude and intensity of teh earth surface processes. This critical symbiosis between process and change, change and process is mediated almost everywhere on earth through the hydrological cycle and the vegetation cover.

In this book a wide range of these subjects is reviewed and fresh research has been presented. The material covers theoretical, empirical and laboratory investigations from a wide range of global environments. In addition, a variety of processes, including hillslope, weathering, fluvial and aeolian are discussed in relation to the interaction between morphology and plant cover, mass and composition.

The book will be of interest to scientists in a variety of disciplines, including geomorpholoigsts, ecologists, hydrologists and civil engineers.

Price: £ 70

Orders to: John Wiley & Sons, 605 Third Avenue, New York NY 10158-0012, U.S.A. *or:* John Wiley & Sons, Baffins Lane, Chichester, West Sussex PO19 1UD, England.

Soil Micromorphology – A Basis and Applied Science. Developments in Soil Science 19. L.A. Douglas, editor. Elsevier Science Publishers, Amsterdam, Oxford, 1990, xvii + 716p. ISBN 0-444-88302-9. Hardbound.

This publication forms the Proceedings of the 8th International Working Meeting of Soil Micromorphology of the Sub-Commission on Soil Micromorphology of the ISSS, which was held in San Antonio, Texas, July 1988.

The diverse program of the Working Meeting, address multifaceted and multidisciplinary, current activities. They emphasize: 1) soil and ecological conditions of the arid and semiarid regions of the world (Aridisols, Vertisols, soils enriched with carbonates, gypsum and salts); 2) hydromorphic or wetland conditions; 3) current and national/international research priorities (soil erosion and degradation, water quality and conservation and waste disposal); 4) applications of micromorphology to agronomic and earth scientists (soil/root interface, soil structure and porosity, water movement and retention, and mineral degradation and synthesis); 5) education/technology transfer; 6) micromorphic techniques (new differential dissolution procedures, quantification of micromorphology, submicroscopy, and dye stains for component identification); and 7) applications to other disciplines (geology, paleopedology and extraterrestrial sciences).

Recently developed methods for staining of microorganisms and thin section fluorescence microscopy are included. The volume presents a summary of the research findings of the major practitioners of soil morphology and will give the reader insight as to the present state of the discipline. New methods and techniques are made available to the reader.

Price: Dfl 270.

Orders to: In USA and Canada: Elsevier Science Publ. Comp., P.O. Box 882, Madison Square Station, New York NY 10159, U.S.A.; *Elsewhere:* Elsevier Science Publishers, P.O. Box 211, 100 AE Amsterdam, the Netherlands.

Loess. Its distribution, geology and soils. D.N. Eden and R.J. Furkert, editors. A.A. Balkema, Rotterdam and Brookfield, 1988, ix + 245p. ISBN 90-6191-851-0. Hardbound.

These proceedings of an international symposium on loess, held under the auspices of the INQUA Loess Commission in New Zealand during February 1987, represent an important contribution to knowledge of the world's loess deposits and their properties. The book, which is illustrated with 80 maps, photographs and diagrams, contains 18 full papers, and 11 abstracts, comprising all the papers presented at the symposium. These papers concern loess in New Zealand, Antarctica, Asia, North America and Europe.

Loess consists of wind-blown dust deposited during Pleistocene cold climates and covers approximately 10% of the world's land surface. Loess soils form a broad belt across Europe and Asia from the British Isles to north-eastern China. They are also extensive in midcontinental USA, Argentina and New Zealand. Loess soils are important food-producing soils. Much of the grain belt of the USA for example is located on the loess region.

The papers cover many aspects of loess ranging from its distribution and properties, to its stratigraphy, age and sources. Soil development and the problems of erosion are also examined and past climates are interpreted.

Price: Dfl 95

Orders to: In U.S.A. and Canada: A.A. Balkema Publ., Old Post Road, Brookfield VT 05036, U.S.A. *Elsewhere:* A.A. Balkema, P.O. Box 1675, 3000 BR Rotterdam, The Netherlands.

Economy and Ecology: Towards Sustainable Development. F. Archibugi and P. Nijkamp, editors. Kluwer Academic Publishers, Dordrecht, Boston, 1989, xi + 348p. ISBN 0-7923-0477-2. Hardbound.

After a period of relative silence, recent years have been marked by an upswing of interest in environmental issues. The publication of the report of the World Commission on Environment and Development on 'Our Common Future' (the 'Bruntlandt Report', 1987) has acted as a catalyst for a revival of the environmental awareness, not only regarding local and daily pollution problems, but also – and in particular – regarding global environmental decay and threats to a sustainable development.

Unfortunately, in many discussions, economy and ecology are still regarded as enemies and not as potential allies. This book brings together a collection of contributions which aim at a reconciliation of potentially conflicting interests between ecological and economic values. This endeavour is approached from two complementary angles, viz. methodological and theoretical reflections on the issue of sustainable management. It is shown that in the current debate on sustainable development the scientific heritage from past contributions to economic-ecological analysis provides a wealth of important – and in many cases even necessary – material, which can be used as meaningful and appropriate ingredients for balanced and concerted environmental resource management.

Price: US$ 95, $ 59, Dfl 175

Orders to: In U.S.A. and Canada: Kluwer Academic Publishers, 101 Philip Drive, Norwell, MA 02061, U.S.A. *Elsewhere:* Kluwer Academic Publishers Group, P.O. Box 322, 3300 AH Dordrecht, The Netherlands.

[1] D.H. Yaalon, 1964. Has soil research national characteristics? Soils and Fertilizers, 27:89-93

International Symposium on Water Erosion, Sedimentation and Resource Conservation, Dehradun, India, 9-13 October 1990.

The aims of this meeting were: (1) to make an inventory of erosion hazards in relation to the biosphere; (2) the prediction of erosion, conservation measures and sustainable land use systems; (3) sedimentation in reservoirs and flood plains; (4) integrated management of resources on watershed basis for optimizing production and conservation of environment; (5) alternate land use systems for production and protection; and (6) socio-economic and legislative aspects of soil and water conservation measures.

The results which emerged from the deliberations are: (1) there is need to suitably modify the existing legislation policy to prevent land degradation; (2) integrated soil and water conservation programmes should be carried out on watershed basis and team should include multiple disciplines including sociologists and economists; (3) water resource development through harvesting rainwater and its use for successful development and management of watershed; (4) for developing erosion control programmes, more weightage may be given to the indigenously developed technology; (5) there is need to generate data on all aspects of erosion sedimentation and land degradation and forming national and international data banks; (6) there is need of international cooperation on soil and water conservation, and agroforestry research; (7) need to develop standard methodology for evaluation socio-economic benefits for soil and water conservation projects/watersheds; (8) there is need to develop scientific agroforestry systems for improving production of fodder and fuel/fruits to conserve the soil and ensuring long term productivity; and (9) since soil conservation programmes are for the people and hence should be organized by the people. To ensure this, sufficient extension people with proper training are required.

The detailed deliberations of the sessions of symposium have been brought out in the proceedings.

Price: Rs 200 plus Rs 42 for foreign postage.

Orders to: Central Soil and Water Conservation Research and Training Institute, 218 Kaulagarh Road, Dehradun 248195 (U.P.), India.

Soils of China. Li Chingkwei and Sun Ou, editors. Science Press, Beijing, 1990, 908p. and 43 colour plates. ISBN 03-000520-1/S.12. Hardcover.

This is the first volume dealing with the soils of China written in English since the foundation of the People's Republic of China in 1949.

The impressive book includes three parts. The first one includes 18 chapters and covers the general genetic characteristics, classification and geographical distribution of the soils in China. The second part of 16 chapters deals with the relationship between fertility conditions and plant growth on various soils, and the physical, chemical and biological characteristics of the soils in China. The third part including 12 chapters elaborates on the improvement and utilization of various low-yield soils in China.

One of the most important characteristics of this book is that all the chapters were written on the basis of the data and results coming from research work of institutions all over the country in the last 35 years. It deals with the achievements and advances in soil geography, soil physics, soil chemistry, soil biology and soil pollution and their branch disciplines in China since 1949. This volume can actually be considered as a summation of soil researches of the country since her foundation.

A colour map of soils in China on a scale of 1:10.000.000 is also provided in the book.

Price: US$ 118.00

Orders to: Science Press, 16 Donghuangchenggen North Street, Beijing 100707, Peoples Rep. of China.

Formation, Development, Properties and Cultivation of Tropical Soils – A Short Introduction. J.P. Møberg, DSR Forlag, Kopenhagen, 1990. ISBN 87-7432-362-8.

This introduction to formation, properties and use of tropical soils is written to provide some background reading for students, who are taking the course on pedology and edaphology of tropical soils for final year undergraduate students at the university in Copenhagen, Denmark.

In chapter 1 the importance of tropical soils is compared with those in temperate areas. The chapter also contains some definitions of terms which may not carry the same meaning to all the readers. Chapters 2 and 3 review soil forming factors and processes. In chapter 4 soil development in different parts of the tropics is considered. In chapter 5 and 6 the relationship between land use and soil chemical and physical properties is discussed. Soil erosion in the tropics is the theme of chapter 7, whereas different land use systems are considered in chapter 8.

Annex I contains a brief evaluation of some of the analytical methods recommended for use for characterization of tropical soils. Finally, Annex II lists addition reading.

Price: US$ 25 surface mail, US$ 30 airmail.

Orders to: DSR Forlag, K.V.L., Thorvaldsensvej 40, DK-1871 Frederiksberg C, Denmark.

Proceedings of the International Symposium on Dynamics of Salt-affected Soils, Nanjing, China, October 1989. Institute of Soil Science, Academia Sinica, Nanjing, 1989, 207p.

This symposium was held under the joint sponsorship of the Subcommission of Saline and Alkali Soils *of the Soil Science Society of China and the Subcommission A of the International Society of Soil Science* in Nanjing, October 4-10, 1989.

The aim of the symposium was to go further into the (ir)regularities of salt and water movement in salt-affected soils, to enhance a better understanding and cooperation among scientists from different countries and to promote the further development of scientific research on salt-affected soils. Emphasis of the discussion was laid on the characteristics of saltwater movement in soils, the prognosis and prediction of soil salinization and other questions concerning salt-affected soils under different conditions.

This publication contains the texts or extended abstracts of the 45 papers presented at the meeting.

Orders to: The Institute of Soil Science, Academia Sinica, P.O. Box 821, Nanjing, P.R. of China.

Institute for Soil Fertility Research 1890-1990. Netherlands Journal of Agricultural Science, vol.38, September 1990, pp.205-397. Royal Netherlands Society of Agricultural Science, Wageningen.

The Institute for Soil Fertility Research in Haren, the Netherlands, was established as a State Agricultural Experimental Station in Groningen on 2 January 1890. From 1890-1915 the major occupation of the experimental station was the quality control of animal feedstuffs and fertilizer materials for agriculture in the northern part of the Netherlands. In 1916, the experimental station was given the task to conduct scientific research on arable and grassland farming in the Netherlands. The research areas after 1916 can be distinguished into (1) soils and hydrology, (2) soil fertility and fertilizers, and (3) crops and crop production. Of these research areas, only soil fertility and fertilizers is still within the domain of the present institute. The other research areas have been transferred to existing (soils) or newly founded institutions (hydrology, crops, crop production). The research on the 'fertility factors' laid the foundation for the system of fertilizer recommendations in the Netherlands, on the basis of soil analysis. In recent years, research emphasis has shifted to environmental issues and the ecology of agricultural systems, making use of simulation modelling and other mathematical tools for the description of soil-crop ecosystems.

The present issue of the Netherlands Journal of Agricultural Science contains 11 scientific contributions on the various activities of the institute.

Orders to: Royal Netherlands Society of Agricultural Science, P.O. Box 79, 6700 AB Wageningen, The Netherlands.

Soils of the Past. An Introduction to Paleopedology. G.J. Retallack. Unwin Hyman, London, Sydney, 1990, xvii + 520p. ISBN 0-04-445757-X (paperback) 0-04-551128-4 (hardback)

This comprehensive text on paleosols applies the expertise of soil science to ancient sequences of non-marine rocks. It provides an interdisciplinary bridge between the interests of soil scientists, sedimentary geologists and paleontologists, outlining the methods for the study and interpretation of paleosols, and sketching the long geological history of life and landscapes on Earth.

Paleosols formed under very different combinations of conditions in the distant geological past and, for the soil scientist, they provide new tests for basic ideas about soil formation. In terms of Earth history, evidence from paleosols supplements that of sediments and fossils for reconstructing life and landscapes of the past. Furthermore, the evolution of soils through geological time is a fascinating story in its own right.

The book developed as a text for a senior-level course in paleopedology. It provides basic information on how to recognize, map and name paleosols, and how to reconstruct soil-forming processes of the past behind the veil of alteration after burial. Three soil classifications are outlined: the US Soil Taxonomy, the FAO-Unesco Soil Map of the World classification, and the Australian Soil Handbook. Central to the book is an outline of those soil-forming factors most readily and reliably interpreted from paleosols under the headings of climate, organisms, topographic relief, parent material, and time for formation. Finally, the book addresses the evolution of soils from the formation of the Solar System to recent human abuse of the land.

This book will appeal strongly to students and researchers in sedimentary geology, paleontology, soil science, and to archaeologists, paleoanthropologists and prehistorians concerned with environmental reconstruction. It will serve as both a course text and a stimulating source of professional reference in a subfield now widely acknowledged as an important part of the Earth sciences.

Price: £ 24.95 (paperback); £ 60.00 (hardback).

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Albedo de Surface et Bilan Radiatif de Courtes Longueurs d'Ondes: Contribution Satellitaire. O. Arino, Thèse de Doctorat de l'INP de Toulouse, 1990, 182p.

Les prévisions météorologiques et climatiques à moyen et long terme sont d'un intérêt grandissant pour l'étude des changements de notre environnement. L'action de l'homme, au travers de certains phénomènes bien identifiés (augmentation de la concentration en gaz carbonique dans l'atmosphère, diminution de la couche d'ozone, déforestation, culture et modification des sols) est un élément perturbateur de la grande machine physico-chimique qu'est le globe. Une meilleure compréhension de ces phénomènes permettra de mieux prévoir les évolutions climatiques futures.

L'amélioration des prévisions passe par une meilleure modélisation des phénomènes et par une meilleure estimation des paramètres d'entrée des modèles climatiques. Ces modélisations résolvent à différents niveaux et à différentes échelles les équations de transfert d'énergie à la surface de la Terre et au sommet de l'atmosphère est régulé en grande partie par l'énergie solaire dont la part non réfléchie est distribuée dans l'atmosphère et à la surface de la planète sous forme d'énergie aux grandes longueurs d'ondes, de flux de chaleur latente et sensible. Ce bilan d'énergie doit être estimé aussi bien à la surface de la terre qu"à différents niveaux de l'atmosphère. Il est courant d'établir une évaluation de celui-ci au sommet de l'atmosphère et à l'interface sol-atmosphère. Dans les deux cas, l'une des quantités physiques primordiales sera l'albédo planétaire au sommet de l'atmosphère et l'albédo de surface.

La compréhension globale des processus et de leur physique nous permettra de paramétriser les équations du bilan d'énergie (paramétrisation interactive). C'est-à-dire que, par exemple, à l'intérieur d'une canopée il devra être tenu compte des échanges radiatifs et hydriques du fait des interactions entre bilan d'énergie et bilan hydrique. De fait, la représentation des échanges à l'échelle d'un modèle de circulation générale fera intervenir des données d'entrées qui, en interagissant entre elles, se modifieront. L'adaptation des données à la fréquence temporelle et à l'échelle spatiale demandée oblige les météorologues et par suite les climatologues à recourir fréquemment à l'utilisation de données satellitaires. Ainsi des régions peu documentées en termes de données météorologiques ou de conditions aux limites des modèles sont aujourd'hui accessibles grâce aux données de télédétection. Cependant les quantités physiques dérivées des mesures satellitaires n'intègrent qu'une partie des conditions vérifiées par des mesures in situ conventionnelles. Ainsi la mise en oeuvre de modèles qui intègrent des données satellitaires nécessitera une approche différente de la mesure conventionnelle.

Les processus physiques que l'on veut observer et comprendre commandent donc la modélisation et la précision des mesures que l'on veut obtenir. Une grande concertation entre les scientifiques qui étudient les processus aux interfaces, la physique du signal, et ceux qui modélisent le climat afin de prédire son évolution est donc nécessaire. L'objet de cette thèse est d'apporter des éléments nouveaux à la détermination satellitaire de paramètres de surface ainsi que d'analyser les évolutions de ces paramètres dans le temps.

Commandes à: LERTS, 18 avenue Edouard-Belin, F-31055 Toulouse Cedex, France.

Statistical Methods in Soil and Land Resource Survey. R. Webster and M.A. Oliver. Oxford University Press, Oxford, New York, 1990, 316p. ISBN 0-19-823317-5 (hardback); 0-19-823316-7 (paperback).

This book, like its predecessor, *Quantitative and Numerical Methods in Soil Classification and Survey* (R.Webster, Clarendon Press, Oxford, 1977), is addressed to working scientists and advanced students in pedology, engineering, ecology, and geography who study the natural resources at the earth's surface by what are, broadly speaking, survey methods as distinct from experiments. It is written for those who observe, record, and analyze information about those resources with ever-present spatial variation over which they have no experimental control. It describes methods for making surveys quantitative, stressing the need for measurement, sound sampling, sensible and efficient estimation, and proper planning. The traditional techniques of land resource survey all embody classification at some stage, and this book discusses the role of classification, how it can be performed mathematically, and in which situations it is likely to be helpful. There have been major developments over the last few years in geostatistics, which provides a very different approach to local estimation, mapping, and sampling. The book describes the elements of the underlying theory and how they can be applied in practice. Each approach has its place in its proper context. The book explains this. It aims always to help readers choose the most suitable techniques for tackling their problems in context. The material in this book will be essential reading for advanced students of pedology, geography, superficial geology, ecology, engineering and environmental science as well as practitioners in all these fields and anyone concerned with surveys of natural resources.

Price: £ 40.00 (hardback); £ 20.00 (paperback).

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

The Transformation of International Agriculture Research & Development. J. Lin Compton. Lynne Rienner Publishers, Boulder and London, 1989, xi + 237p. ISBN 1-55587-146-1. Hardbound.

The institutionalizing of agricultural research in developing countries has had a profound impact on food production, the quality of rural life, and the nature of the scientific enterprise in general. In fact, the very character of the process of promoting development is itself being transformed, resulting in a new emphasis on the need to establish generative capabilities and culturally appropriate institutional forms within the developing countries. This emphasis is, at least in part, a reaction to an emerging awareness of previously poorly conceived efforts to transfer institutional forms and agricultural technologies developed in a country whose culture and resources are very different from those of the developing countries.

Addressing the transformation of the nature and functions of agricultural research and development institutions and their programs, this book explores the major changes and identifies key trends and issues. The authors also document the influence on agricultural development of such U.S. initiatives as experiment stations and assess the effectiveness of various research and education strategies in Asia, Africa, Latin America, and the Middle East.

The topics discussed, all central to the transformation process, include the simplified communication of scientific knowledge, the role of women and the linking of indigenous and scientific agricultural knowledge. The final chapters consider the functioning of the international agricultural research network and the development of farming systems research and extension strategies.

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Standardization within Analytical Chemistry. P. Kivalo. Akadémiai Kiadó, Budapest, 1989, 154p. and appendices. ISBN 963-05-5604-9.

Standardization within analytical chemistry has advanced along two paths.

Standard methods have been developed by national societies and international organizations concerned with either general chemical matters or some particular field. These methods are based on sound scientific principles, but are seldom the most precise and fundamentally exact ones. For commercial and many other purposes, they are quite adequate.

Standardized methods, or test methods, are methods of analysis that usually appear in conjunction with product standards. They are selected by a standards committee from existing published methods of analysis. Quite often, the above-mentioned standard methods, or their modification are employed. Standardization on a national and international scale has reached the status of an independent discipline.

In this book the interest is focused mainly on the standardized analytical methods appearing in the international and some national standards for the determination of one or more specified characteristics of a material or product in order to ensure the fitness for purpose.

The object is to present some of the pertinent steps in the procedure of preparing standards of this category paying attention to the requirements put forward by the employment of the analytical laboratory. The aim is to stress the significance of analytical chemistry in this context.

The appendices are texts of some International Standards, as published by the International Organization for Standardization (ISO).

Price: US$ 36.00

Orders to: Akadémiai Kiadó, Prielle Kornélia U. 19-35, H-1117 Budapest, Hungary.

MicroLEIS: A Microcomputer-based Mediterranean Land Evaluation Information System. D. de la Rosa, coordinator. IRNA, CSIC. Reg.Mark £1591179 (Spanish + English versions). Madrid, 1990. Software Package.

At the presently crucial juncture, agricultural production has to emphasize on optimum land use systems for resources sustainability and environmental quality. For the particular case of Mediterranean regions, the central question is if these semiarid ecosystems can be managed for productive and sustainable agriculture given the cyclical nature of climate and the intensive use of land. Land evaluation appears to be ideal framework for this agroecologist approach, making possible to use land according to land potentiality.

In order to favour local dissemination and exploitation of results, a PC computer-based land evaluation information system (MicroLEIS) was developed for optimal allocation of agricultural and forestry land use systems, under Mediterranean conditions. The global outline of the methodology, which is in general accordance with FAO-Framework for Land Evaluation and with adaptations established for the European Community, integrates land evaluation methods previously developed by the coordinator and collaborators. Through and interactive and user-friendly procedure, several land capability, suitability and yield prediction methods may be automatically applied. These qualitative/quantitative biophysical land evaluation methods are combined by MicroLEIS, which appears to result a useful tool to predict appropriate agroforestry land uses. The software package, Spanish or English version, can be obtained on double or high density diskettes, along with an explanatory brochure and reprints of the literature used as basis to develop this software.

Requests to: Prof. D. de la Rosa, Instituto de Recursos Naturales y Agrobiologia, CSIC, P.O. Box 1052, E-41080 Sevilla, Spain.

Climate Change. Implications for Water and Ecological Resources. G. Wall and M. Sanderson, editors. Dept. of Geography, University of Waterloo, 1990, 342p. ISBN 0-921083-36-X.

During the last few years, the international scientific community has initiated numerous studies which assess the sensitivity of environment and society to climate change. In Canada, these activities have resulted in a series of reports dealing with specific aspects of the possible effects of climate change on the country's ecosystems and people. In almost all cases, the studies were based on General Circulation Model (GCM)-derived scenarios of future climate.

While the results of the above studies have proven extremely valuable as initial assessments of the possible repercussions of climate change, in most cases the conclusions are qualitative and do not yet address the full impacts of changed frequencies and severity of extreme events. Although the reasons for these deficiencies vary, they include the coarseness of spatial resolution of GCM outputs, the crudeness of statistics on the effect of climate change on climate variability, and the lack of sufficient dialogue between climate modellers and impact analysts.

With the imminent availability of results from the Canadian Climate Centre $2 \times CO_2$ GCM experiments, increased modelling activities into transient climate response to CO_2 increase, and the development of regional scale submodels that increase the detail of GCM projections for a specified area, it is opportune to promote greater interaction between modellers and impact analysts. Of particular importance are questions concerning the hydrologic and ecologic response to climate change, since both are key factors in understanding related socio-economic impacts and in maintaining environmental quality. To this end, a workshop on 'Climate Change: Implications for Water and Ecological Resources' was organized.

A primary objective of the workshop was to facilitate future cooperation, establishing linkages among modellers and analysts in the fields of climate, hydrology and ecosystem research, as well as policy makers and others interested in the analysis process. A second objective was to evaluate the climate modelling and impact modelling projects presently available and to develop methods and strategies for future studies.

The present publication contains the 31 papers presented at the plenary sessions and workshops. The plenary sessions were designed to provide a broad perspective on climate change, with an emphasis on the state-of-the-art of climate modelling, impact analyses, and their implications for public policy. The five workshops were on: water resources, supply and demand; wetlands, wildlife and fisheries; energy and transportation; agriculture and forests; and conservation strategies. Summaries and recommendations from each workshop are also presented.

Price: Can$ 20.00, plus $ 3.50 for postage and handling.

Orders to: Dept. of Geography, attn. S. Friesen, Univ. of Waterloo, Ont., Canada N2L 3G1.

Abstracts on Sustainable Agriculture. Volume 2, 1989. J. Carls, compiler. Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Eschborn, 1990, 372p. ISBN 3-528-02060-1.

This compilation of annotated bibliographic information contains over 250 comprehensive abstracts on sustainable agriculture in the following fields: traditional land-use systems, farming systems research and development, cropping systems, agroecology, agrometeorology, agroforestry, homegardens, seed production, plant protection, water management, soil fertility, erosion control and potential crops for marginal lands.

There is a subject index based on key words, a geographical index and an authors' index.

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New Journals/Nouveaux Périodiques/Neue Zeitschrifte

Global and Environmental Change. Human and Policy Dimensions. Quarterly. Butterworth Scientific. ISSN 0959-3780.

There is growing evidence that the earth is being transformed by human actions in ways that pose grave threats not only to our own well-being, but also to the sustainability of life in the entire global system. However, there are steps that can and should be taken to anticipate these changes, to reduce their impacts and plan for the residual consequences.

The present new international journal addresses the human ecological and public policy dimensions of the environmental processes which are threatening the earth, including deforestation, desertification, soil degradation, species extinction, sea level rise, acid precipitation, destruction of the ozone layer, atmospheric warming/cooling, nuclear winter, the emergence of new technological hazards, and the worsening effects of natural disasters.

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Journal of Sustainable Agriculture. R.P. Poincelot, editor. Food Products Press, Binghamton. ISSN 1044-0046.

This journal devoted to the study and application of sustainable agriculture for solutions to the problems of resource depletion and environmental misuse. Articles will focus on systems in which resource use and environmental protection are kept in balance with the needs of productivity, profits, and incentives that are necessary for the agricultural marketplace. On the cutting edge of a growing environmental awareness around the world, the journal will feature articles on research; innovative practices; new technology; IPM (Integrated Pest Management) programs; organic farming; energy use; the economic, social and philosophical aspects of sustainable agriculture; conservation; and future projections.

Subscription price: US$ 24 for individuals, $ 36 for institutions, $ 48 for libraries. Outside U.S.A: add 40% to subscription price.

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Ecological Economics. The Journal of the International Society of Ecological Economics. R. Costanza, editor-in-chief. Elsevier Science Publ., Amsterdam. ISSN 0921-8009.

The journal is concerned with extending and integrating the study and management of 'natures household' (economics). This integration is necessary because conceptual and professional isolation have led to economic and environmental policies which are mutually destructive rather than reinforcing in the long term. The journal is transdisciplinary in spirit and methodologically open.

Specific research areas covered include: valuation of natural resources, sustainable agriculture and development, ecologically integrated technology, integrated ecologic-economic modelling at scales from local to regional to global, implications of thermodynamics for economics and ecology, renewable resource management and conservation, critical assessments of the basic assumptions underlying current economic and ecological paradigms and the implications of alternative assumptions, economic and ecological consequences of genetically engineered organisms, and gene pool inventory and management.

Subscription price: (1990) US$ 134 or Dfl 268.

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Pesticide Outlook. A review and news journal of current developments on all aspects of pesticides and their use. G. Stell, editor. Royal Society of Chemistry, Cambridge. ISSN 0956-1250.

This new journal publishes comprehensive review articles on pesticides in crop protection, animal and human health, wood preservation, and amenity use etc. The papers will reflect the rapidly changing activities in the use of chemicals to control weeds, pests and diseases. The journal covers worldwide developments and issues, including alternatives to the use of chemicals, with environmental impact given due prominence. It provides news of new pesticides, improved application techniques, and integrated pest management programmes etc.

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B. Soil Micromorphology/Micromorphologie du Sol/Bodenmikromorphologie
Dr. L.P. Wilding, Dept. of Soil & Crop Science, Texas A&M Univ., College Station TX 77843, USA

C. Soil Conservation and Environment/Conservation du Sol et Environnement/Bodenerhaltung und Umwelt
Prof. I. Pla-Sentis, Las Acacias, Apartado 1131, Maracay, Venezuela

D. Soil Zoology/Zoologie du Sol/Bodenzoologie (with/avec/mit IUBS)
Dr. M.B. Bouché, CEPE-CNRS, B.P. 5051, 34033 Montpellier, France.

Working Groups of the Commissions/Groupes de Travail des Commissions/Arbeitsgruppen der Kommissionen – Chairmen/Présidents/Vorsitzende

AS Acid Sulphate Soils/Sols Sulphatés Acides/Saure Sulfatböden
Dr. S. Sadio, ISRA/ORSTOM, B.P. 1386, Dakar, Senegal

DM World Soils and Terrain Digital Data Base/Carte Internationale Numérique des Sols et des Terrains/ Digitalisierte International Boden- und Landkarte (SOTER)
Prof.Dr. M.F. Baumgardner, Dept. of Agronomy, Purdue University, West Lafayette IN 47907, USA

FS Forest-Soil Relationship/Relations Sol-Forêt/Wald-Boden Beziehungen
Dr. P.K. Khanna, CSIRO, Div. of Forest Research, P.O. Box 4008, Queen Victoria Terrace ACT 2600, Australia

FT Soil Fertility Trials/Essais de Fertilité des Sols/Bodenfruchtbarkeitsproben
Dr. S.K. De Datta, IRRI, P.O. Box 933, Manila, Philippines

HP History, Philosophy and Sociology of Soil Science/Histoire, Philosophie et Sociologie de la Science du Sol/Geschichte, Philosophie und Soziologie der Bodenkunde
Prof.Dr. D.H. Yaalon, Dept. of Geology, Hebrew University, Jerusalem 91000, Israel

LI Land Evaluation Information Systems/Informatique de l'Evaluation des Terres/Landbewertung und Informationssysteme
Dr. J. Dumanski, Land Resources Research Institute, Agric. Canada, Ottawa, Ontario, Canada K1A 0C6

MO Interactions of Soil Minerals with Organic Components and Micro Organisms
Prof. P.M. Huang, Univ. of Saskatchewan, Dept. of Soil Science, Saskatoon, Sask., Canada S7N 0W0

MV Soil and Moisture Variability in Time and Space/Variabilité du Sol et de l'Humidité dans le Temps et l'Espace/Boden- und Feuchtigkeitsvariabilität in Raum und Ziet
Prof.Dr. J. Bouma, Dept. of Soil Science and Geology, Agric. University, P.O. Box 37, 6700 AA Wageningen, Netherlands

PM Pedometrics
Prof. Dr. D.E. Myers, Dept. of Mathematics, Univ. of Arizona, Tucson AZ 85721, USA

PP Paleopedology/Paléopédologie/Paläopedologie
Dr. J.A. Catt, Rothamsted Exp. Station, Harpenden, Herts, AL5 2JQ, England

PS Paddy Soils Fertility/Fertilité des Sols Rizicoles Irrigués/Fruchtbarkeit von Reisböden
Prof. Zhu-Zhaoliang, Inst. of Soil Science, Academia Sinica, P.O. Box 821, Nanjing, P.R. of China

PT Pedotechnique/Pédotechnique/Pedotechnik
Dr. R. Horn, Inst. of Plant Nutrition & Soil Science, Olsenhausenstrasse 40-60 Haus 20A, 2300 Kiel-1, Germany

RS Remote Sensing for Soil Survey/Pédologie et Télédétection/Fernerkndung für Bodenkartographie
Dr. R.L. Karale, Remote Sensing Service Centre, NBSS & LUP Campus, Amravati Road, Nagpur 440010, India

RZ Rhizosphere/Rhizosphère/Rhizosphäre
Prof.Dr. A. Jungk, Inst. f. Agrikulturchemie, Von Sieboldstrasse 6, 3400 Göttingen, Germany

SG Soils and Geomedicine/Sols et Géomédecine/Böden und Geomedicin
Prof. J. Låg, Dept. of Soil Science – AUN, P.O.Box 28, 1432 Ås-NLH, Norway

SP Soil and Groundwater Pollution/Pollution du Sol et des Eaux Souterraines/Boden- und Bodenwasserverschmutzung
Dr. P.J. Wieringa, Univ. of Arizona, Soil & Water Science, Tucson AZ 85721, USA

Standing Committees/Comités Permanents/Städige Komitees – Chairmen/Présidents/Vorsitzende

CSS Committee on Statute and Structure/Comité Statuts et Structure/Komitee für Statut und Struktur
Prof.Dr. P.B. Tinker, NERC, Polaris House, North Star Avenue, Swindon SN2 1EU, England.

CIP Committee on International Programmes/Comité sur les Programmes Internationaux/Komitee für Internationale Programme
Prof.Dr. H. Scharpenseel, Inst. für Bodenkunde, Allende-Platz 2, 2000 Hamburg 13, Germany

CST Committee on Standardization/Comité sur la Standardisation/Standardisierungskomitee
Prof.Dr. H-P. Blume, Inst. für Pflanzenern.u.Bodenkunde, Olshausenstr. 40-60, 2300 Kiel 1, Germany

CBF Committee on Budget and Finances/Comité Budget et Finances/Budget- und Finanzkomitee
Dr. W.R. Gardner, College of Natural Resources, Univ. of California, Berkeley, CA 94720, USA

CES Committee on Education in Soil Science/Comité pour l'Enseignement de la Pédologie/Komitee für Bodenkundeausbildung
Prof.Dr. A. Ruellan, 2, Bd. Berthelot, F-34000 Montpellier, France

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