

# BULLETIN

OF THE INTERNATIONAL SOCIETY  
OF SOIL SCIENCE

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# BULLETIN

DE L'ASSOCIATION INTERNATIONALE  
DE LA SCIENCE DU SOL

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# MITTEILUNGEN

DER INTERNATIONALEN BODENKUNDLICHEN  
GESELLSCHAFT

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

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

**COUNCIL/CONSEIL/BEIRAT:**

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- Prof. J. A. Prescott, 6 / 2 Netherby Avenue, Netherby, S.A. 5062, Australia.
- Dr L. A. Richards, 4455 Fifth Street, Riverside, Cal. 92501, U.S.A.
- Prof. Dr A. A. Rode, Dokuchaev Soil Institute, Pygevski per. 7, Moscow, USSR.

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- II — SOIL CHEMISTRY**  
Chairman: H. Laudelout, Laboratoire de Physico-Chimie Biologique 42 De Croylaan, Héverlé-Louvain, Belgium.
- III — SOIL BIOLOGY**  
Chairman: M. Alexander, New York State College of Agriculture and Life Sciences, Department of Agronomy, Bradfield and Emerson Halls, Ithaca, N.Y. 14850, U.S.A.
- IV — SOIL FERTILITY AND PLANT NUTRITION**  
Chairman: O. T. Rotini, Istituto di Chimica Agraria dell'Università degli Studi, Via S. Michele degli Scalzi, 2, 56100 Pisa, Italy.
- V — SOIL GENESIS, CLASSIFICATION AND CARTOGRAPHY**  
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- VII — SOIL MINERALOGY**  
Chairman: K. Norrish, C.S.I.R.O. Division of Soils, Private Bag 1, P.O. Glen Osmond, S.A. 5064, Australia.

**NOTICE**

The membership fee of three US-dollars per calendar year, or equivalent in any other convertible currency, should be paid preferably through the intermediary of your National Society, or by international money order, or directly into the ISSS account 54.02.62.706 with Algemene Bank Nederland, Spuistraat 150, Amsterdam (C.C.P. Bank: 6269)

Unesco Coupons, which may be procured from the national Unesco Commission, are also accepted.

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No. 43

1973

## NEWS OF THE SOCIETY

### The 10th International Congress of Soil Science Moscow, 12 - 20 August 1974 Fourth circular

#### I. Final Prices for INTOURIST Services in 1974

Intourist offers the following services for the participants of the Congress and accompanying persons:

- Rbs. 28.00 per person a day - accommodation in a single room with bath;
- Rbs. 21.00 per person a day - accommodation in a double room with bath.

The above prices cover the following services:

- hotel accommodation in first class single or double rooms;
- breakfast, dinner (or supper);
- daily transportation from hotel to the place of sessions and back;
- portorage of a 2-piece luggage;
- transportation by bus or car upon arrival and departure;
- trips according to the Congress and Intourist programme.

#### II. Final Itineraries and prices for Post-congress Excursions

- Tour 1:* Moscow - Puschino - Moscow - Tula - Orel - Kursk - Kharkov - Zaporozhie - Melitopol - Novaya Kakhovka - Simferopol - Yalta - Moscow.  
Duration of the excursion - 10 days.  
The cost - 265 roubles.
- Tour 2:* Moscow - Rostov Yaroslavsky - Moscow  
(Visits to Zagorsk, Pereyaslavl - Zalessky).  
Duration of the excursion - 4 days.  
The cost - 105 roubles.
- Tour 3:* Moscow - Petrozavodsk - Leningrad - Siktivkar - Moscow.  
Duration of the excursion - 10 days.  
The cost - 349 roubles.
- Tour 4:* Moscow - Sukhumi - Tskhaltubo - Batumi - Makharadze - Tbilisi - Zakatali - Shemakha - Baku - Moscow.  
Duration of the excursion - 12 days.  
The cost - 335 roubles.
- Tour 4a:* Moscow - Sukhumi - Tskhaltubo - Batumi - Makharadze - Tbilisi - Lake Sevan - Yerevan - Moscow.  
Duration of the excursion - 12 days.  
The cost - 347 roubles.



- Tour 5:** Moscow - Alma Ata - Tselinograd - Schutchinsk - Koktchetav - Moscow  
Duration of the excursion - 9 days.  
The cost - 333 roubles.
- Tour 6:** Moscow - Novosibirsk - Kotorovo - Lake Karatchi - Novosibirsk - Artibas  
- Novosibirsk - Moscow.  
Duration of the excursion - 10 days.  
The cost - 514 roubles.
- Tour 7:** Moscow - Tashkent - Samarkand - Bukhara - Samarkand - Moscow.  
Duration of the excursion - 10 days.  
The cost - 357 roubles.
- Tour 8:** Kazan - Ulyanovsk - Tolyatti - Devushkin Ostrov - Volgograd - Rostov  
on-Don.  
The excursion will take place on board of the modern motorship  
"Alexander Pushkin".  
Duration of the excursion - 12 days.  
The cost - 280 roubles first class;  
250 roubles second class.

The above prices cover the following services:

- hotel accommodation in a double room with bath;
- first class menu three meals a day (breakfast, dinner and supper);
- 2 daily excursions by bus with guide-interpreter's service;
- passage along the tour;
- meeting and seeing off in all the cities mentioned in a tour.

### **III. Exhibition**

The Congress participants may visit the International Exhibition of equipment and devices used in soil science, agrochemistry and agriculture ("Pochvovedenie-74") which will take place from 8 - 20 August 1974 at the territory of the All-Union Exhibition of Economic Achievements. A number of institutions and Ministries of the USSR and more than 75 foreign firms producing equipment and devices for soil science and agrochemistry, will take part in the Exhibition.

### **IV. Registration**

The final sum of the registration fee is U.S. \$ 60 for a Congress participant and U.S. \$ 25 for an accompanying person. Included in the registration fee is the cost of one complete set of the Congress Proceedings as well as the expenditures on the arrangement of the farewell party, a concert and other traditional undertakings.

Accompanying persons have no right for receiving the materials of the Congress.

The deadline for the remittance of the registration fee is 1 July 1974. But the participants failing to pay before 1 May 1974 will have to pay an additional 10% of the sum of the registration fee.

Participants are kindly requested to complete the registration form as annexed and to return it by airmail, if possible prior to 1 February 1974, to the Organizing Committee at Moscow.

**The Organizing Committee of the  
10th International Congress of Soil Science  
Moscow State University  
Sub-Faculty of Pedology  
Moscow 117234, USSR.**

## NOUVELLES DE L'ASSOCIATION

### Le 10e Congrès International de la Science du Sol Moscou, 12 - 20 août 1974 Quatrième circulaire

#### I. Les prix définitifs des services INTOURIST pour l'année 1974

INTOURIST offre les services suivants aux participants et les personnes qui les accompagnent:

- Rbs 28.00 par personne et par jour une chambre à une personne avec bain
- Rbs 21.00 par personne et par jour pour une chambre à deux personnes avec bain

Les prix susmentionnés comprennent les services suivants:

- logement à un hôtel de première classe;
- petit déjeuner, déjeuner (ou dîner);
- transport par bus ou car à l'arrivée et au départ;
- port de deux valises;
- transport par bus ou car à l'arrivée et au départ;
- excursion prévues dans le programme du Congrès et INTOURIST.

#### II. Les prix et les itinéraires définitifs des excursions après Congrès

*Excursion 1:* Moscou - Pouchtchino - Moscou - Toula - Orel - Koursk - Kharkov - Zaporojié - Méliopol - Novaïa Kakhovka - Simféropol - Yalta - Moscou.

Durée du voyage: 10 jours.

Prix: 265 roubles.

*Excursion 2:* Moscou - Rostov Iaroslavski - Moscou.  
(avec des visites à Zagorsk, Périéaslavl - Zalesski).

Durée du voyage: 4 jours.

Prix: 105 roubles.

*Excursion 3:* Moscou - Pétrozavodsk - Léningrad - Syktyvkar - Moscou.

Durée du voyage: 10 jours.

Prix: 349 roubles.

*Excursion 4:* Moscou - Soukhomi - Tskhaltoubo - Batoumi - Makharadzé - Tbilissi - Zakataly - Chémakha - Bakou - Moscou.

Durée du voyage: 12 jours.

Prix: 335 roubles.

*Excursion 4a:* Moscou - Soukhomi - Tskhaltoubo - Batoumi - Makharadzé - Tbilissi - Lac Sévan - Erévan - Moscou.

Durée du voyage: 12 jours.

Prix: 347 roubles.

*Excursion 5:* Moscou - Alma Ata - Tsélinograd - Chtchoutchinsk - Koktchétaï - Moscou. Durée du voyage: 9 jours. Prix: 333 roubles.

*Excursion 6:* Moscou - Novosibirsk - Kotorovo - Lac Karatchi - Novosibirsk - Artybach - Novosibirsk - Moscou.

Durée du voyage: 10 jours.

Prix: 514 roubles.

*Excursion 7:* Moscou - Tachkent - Samarkand - Boukhara - Samarkand - Moscou.

Durée du voyage: 10 jours.

Prix: 357 roubles.

*Excursion 8:* Kazan - Oulianovsk - Togliatti - Ile des Jeunes Filles - Volgograd - Rostov-sur-le-Don.

Cette excursion sera effectuée à bord du bateau moderne "Alexandre Pouchkine".

Durée du voyage: 12 jours.

Prix: — première classe - 280 roubles;

— deuxième classe - 250 roubles.

Les prix susmentionnés comprennent les services suivants:

- hôtel avec chambre à deux personnes avec bain;

- trois repas par jour (petit déjeuner, déjeuner et dîner) d'après menu de première classe;
- deux excursions journalières par bus avec le service d'un guide-traducteur;
- voyage d'après l'itinéraire;
- réunions et manifestations dans toutes les villes signalées dans l'itinéraire;

### **III. Exposition**

Les participants au Congrès auront la possibilité de visiter une exposition internationale des dispositifs et de l'appareillage utilisés en pédologie, chimie agricole et agriculture "Potchvovédénié-74" qui se tiendra du 8 au 20 août 1974 sur le territoire de l'Exposition des acquisitions de l'économie nationale de l'URSS. Y prendront part nombre d'offices et de ministères soviétiques, ainsi que plus de 75 firmes étrangères qui se spécialisent dans la fabrication d'appareillage et d'équipement destinés à la pédologie et à la chimie agricole.

### **IV. Frais d'inscription**

Les frais d'inscription pour chaque participant seront de \$ 60 et comprennent le prix d'un exemplaire des Comptes-rendus du Congrès. Chaque personne accompagnant un participant paiera une inscription d'associé de \$ 25 et ne recevra pas les Comptes-rendus ni les autres documents du Congrès. Ces frais comprennent en outre le prix de la soirée d'adieu, d'un concert et d'autres manifestations traditionnelles.

Les frais d'inscription devront être payés au plus tard le 1er juillet 1974. Ceux qui n'ont pas effectué le paiement avant le 1er mai 1974 seront chargés d'un montant extra de 10% des frais d'inscription.

Les participants sont priés de retourner dûment complété le formulaire d'inscription inséré dans ce Bulletin au Comité Organisateur à Moscou par avion si possible avant le 1er Février 1974.

**Comité d'Organisation du  
10e Congrès International de la Science du Sol  
Moscow State University  
Sub-Faculty of Pedology  
Moscow 117234, USSR.**

## NEUES AUS DER GESELLSCHAFT

### 10. Internationaler Bodenkundlicher Kongress in Moskau vom 12. - 20. August 1974 Viertes Rundschreiben

#### I. Endgültige Preise INTOURIST-Service für das Jahr 1974.

INTOURIST macht folgende Angebote für die Teilnehmer und ihre Begleitpersonen: Rbs. 28.00 je Person und Tag, Einzelzimmer mit Bad  
Rbs. 21.00 je Person und Tag, Doppelzimmer mit Bad.

Die obengenannten Preise schliessen folgenden Service ein:

- Hotelunterkunft;
- Frühstück, Mittagessen (oder Abendessen);
- Tägliche Beförderung vom Hotel zum Tagungsort und zurück;
- Beförderung von 2 Gepäckstücken;
- Beförderung mit Bus oder Pkw bei Ankunft und Abreise;
- Exkursionen wie vorgesehen im Kongress- und Intourist-Programm.

#### II. Endgültige Preise und Routen der Exkursionen nach dem Kongress.

*Exkursion 1:* Moskau - Puschino - Moskau - Tula - Orel - Kursk - Kharkov - Zaporozje - Melitopol - Novaya Kakhovka - Simferopol - Yalta - Moskau.

Dauer der Exkursion - 10 Tage.

Unkosten - 265 Rubel.

*Exkursion 2:* Moskau - Rostov Yaroslavsky - Moskau.

(Es werden besucht: Zagorsk, Pereyaslavl - Zalessky).

Dauer der Exkursion - 4 Tage.

Unkosten - 105 Rubel.

*Exkursion 3:* Moskau - Petrozavodsk - Leningrad - Sikitivkar - Moskau.

Dauer der Exkursion - 10 Tage.

Unkosten - 349 Rubel.

*Exkursion 4:* Moskau - Sukhumi - Tskhaltubo - Batumi - Makharadze - Tbilisi - Zakatali - Shemakha - Baku - Moskau.

Unkosten - 335 Rubel.

*Exkursion 4a:* Moskau - Sukhumi - Tskhaltubo - Batumi - Makharadze - Tbilisi -

Dauer der Exkursion - 12 Tage.

Lake Sevan - Yerevan - Moskau.

Dauer der Exkursion - 12 Tage.

Unkosten - 347 Rubel.

*Exkursion 5:* Moskau - Alma Ata - Tselinograd - Schutchinsk - Koktchetav - Moskau.

Dauer der Exkursion - 9 Tage.

Unkosten - 333 Rubel.

*Exkursion 6:* Moskau - Novosibirsk - Kotorovo - Lake Karatchi - Novosibirsk - Artibash - Novosibirsk - Moskau.

Dauer der Exkursion - 10 Tage.

Unkosten - 514 Rubel.

*Exkursion 7:* Moskau - Tashkent - Samarkand - Bukhara - Samarkand - Moskau.

Dauer der Exkursion - 10 Tage.

Unkosten - 357 Rubel.

*Exkursion 8:* Kazan - Ulyanovsk - Tolyatti - Devushkin Ostrov - Volgograd - Rostov-on-Don.

Diese Exkursion findet statt an Bord des modernen Motorboots "Alexander Pushkin".

Dauer der Exkursion - 12 Tage.

Unkosten: Erste Klasse - 280 Rubel — Zweite Klasse - 250 Rubel.

Die obengenannten Preise schliessen folgenden Service ein:

- Hotelunterkunft in Doppelzimmer mit Bad;
- Drei Mahlzeiten täglich (Erstklassiges Menü);

- Zwei tägliche Exkursionen mit Bus, einschliesslich eines von INTOURIST gestellten Führer- und Übersetzer-Dienst;
- Die Reise wie vorgesehen in der Exkursion;
- Treffen und Abholen in allen Städten.

### **III. Ausstellung.**

Die Kongressteilnehmer können die Internationale Ausstellung von Geräten und Hilfsmitteln angewandt in Bodenkunde, Agrochimie und Agrikultur ("Pochvovedenie-74"), organisiert vom 8. - 20. August 1974 auf dem Gelände der All-Union Ausstellung Wirtschaftsleitungen, besuchen. Eine Anzahl von Instituten und Ministerien der USSR, sowie über 75 Auslandfirmen spezialisiert in der Herstellung von Geräten und Hilfsmitteln für Anwendung in Bodenkunde und Agrochimie nehmen teil an dieser Ausstellung.

### **IV. Anmeldung**

Die endgültige Anmeldegebühren belauft sich auf \$ US 60 je Teilnehmer und auf \$ US 25 je Begleitperson. Diese Gebühren schliessen ein die Kosten für ein Exemplar der Kongressverhandlungen und der Abschiedsparty, Konzert und andere traditionelle Veranstaltungen. Die Begleitpersonen erhalten keine Kongressunterlagen.

Die Zahlungen der Anmeldegebühren müssen bis zum 1. Juli 1974 entrichtet werden. Teilnehmer der ihre Überweisung nicht vor dem 1. Mai 1974 einsenden, müssen einen Zuschlag von 10% der Anmeldegebühren zahlen.

Die Teilnehmer werden gebeten den diesem Heft beigelegten „Registration Form“ auszufüllen und falls möglich vor dem 1. Februar 1974, durch Luftpost zurückzusenden an das Organisationskomitee zu Moskau.

**Das Organisations-Komitee des  
10. Internationalen Bodenkundlichen Kongresses  
Moscow State University  
Sub-Faculty of Pedology  
Moscow 117234, USSR.**



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

**Bulgarian Soil Science Society**

The annual meeting of the Bulgarian Soil Science Society was held on 29th March 1973. Dr. Lulcho Raikov, Secretary of the Society has read the annual report on the activities of the Society for 1969 - 1972 period. The First National Congress of Soil Science has been organized during that period; about 80 soil scientists from abroad have attended the Congress. Very important problems concerning the development of Soil Science in Bulgaria have been considered.

During the period under review different problems on soil classification, land productivity evaluation, chemical control of soil fertility, etc. have been treated.

Discussions have taken place on the report, which have proved the activities of the Board of the Soil Science Society. After the closure of the discussions the new Board has been elected:

President : Prof. I. P. Garbouchev

Vice-Presidents : Prof. V. Koinov and Prof. K. Enikov

Secretary : H. Trashliev, senior scientific worker.

Members: Prof. G. Gyurov (the branch in Plovdiv), Prof. Zh. Voinova, Dominika Boboshevska, assistant professor, M. Milcheva, senior scientific worker, Viktor Donov, senior scientific worker.

The following heads of sections have been elected:

Prof. V. Koinov, Head of Soil Genesis, Geography and Classification

Prof. G. Gyurov, Head of Soil Chemistry, Physics and Melioration

Prof. Zh. Voinova, Head of Soil Biology

Ass. Prof. D. Boboshevska, Head of Soil Fertility and Plant Nutrition.

The members of the Society have given recommendations as regards the preparation of the Plan of Work for the period of the new Board's mandate.

**Sociedad Colombiana de la Ciencia del Suelo**

From 26 - 31 August 1973 the Third Soil Colloquium was held in Bogotá under the title: Phosphorus in the Tropical Zone. Nineteen lectures, given by experts from Colombia as well as from abroad (U.S.A., Germany and France), were given on general aspects of phosphorus in the soil, fertilization of crops, grassland, and forests, methods of laboratory analysis, and application of phosphorus.

Attention has also been paid to economical and marketing aspects of phosphate fertilizers.

Information on the meeting could be received by writing to S.C.C.S., Apartado Aereo 51791, Bogotá 2, Colombia.

**Soil Science Society of America  
Annual Meeting 1972**

The annual meetings of the Soil Science Society of America, in conjunction with the Crop Science Society of America, and American Society of Agronomy were held in Miami Beach, Florida on October 29 - November 3, 1972. The overall theme of the meetings was "Serving Man in an Urban Environment". During the week participating members and guests attended symposia, meal functions, paper sessions, tours, and book and commercial exhibits and witnessed the presentation of annual awards, 20 new Fellows of the society, and the new society officers for 1972 - '73. A record 950 research papers were presented at the meetings.

The theme of the meetings was focused upon during a Tuesday afternoon Special Session presided over by Dr. Ritchie Cowan, President of ASA. Among the areas discussed in this session were "Discovery and Research for Agriculture and Beyond" by S. H. Wittwer, Director, Agricultural Experiment Station, Michigan State University; "The Role of Research in the Environmental Protection Agency" by A. C. Trakowski, Deputy Assistant Administrator, Environmental Protection Agency; "Rural Development - A Pattern for the Future" by William Erwin, Deputy Undersecretary for Rural Development, U.S. Department of Agriculture; and "Land Use Changes in an Urban Environment - Roles of Agronomists" by M. T. Beatty, Extension Program Leader for Natural and Environmental Resources, University of Wisconsin.

In addition to the theme program, several other symposia were held throughout the week. On Monday Division A-6 sponsored a symposium on "Fertility Evaluation of Tropical Soils". CSSA sponsored symposia on "Implementing the Plant Variety Protection Act" and the effects of physiology and biochemistry on plant development; SSSA sponsored a symposium on "Organic Soils." "Communications with the Urban Public", sponsored by Division A-1, and "Turfgrass and the Urban Man", sponsored by Divisions A-2 and C-5 were among the symposia featured on Tuesday. "Crop Production in and for an Urban Society" was sponsored by Divisions A-5, C-2, and C-3. "Environmental Quality: The ERTS Perspective", sponsored by Divisions A-6, C-3, and S-5, was the featured symposium on Thursday.

The papers from a symposium on "Range Resources of the Southeastern U.S." are to be collected and published in an ASA-CSSA Special Publication. The symposium, presented on Tuesday, was sponsored by ASA, CSSA, SSSA, and the Society for Range Management. A CSSA Special Publication will result from a symposium sponsored by Division C-6 on "Anti-Quality Components in Forages".

The convention-goers could hear over 950 research papers written by approximately 1,650 authors and presented in 140 meeting sessions held from Monday to Thursday. Many of the papers will eventually appear in the Agronomy Journal, Crop Science, SSSA Proceedings, Journal of Environmental Quality, and or Journal of Agronomic Education.

Attending the meetings is not all paper sessions and business meetings. In their free time, meeting attendees had opportunities to attend both pre- and post-convention tours, a turfgrass tour and soils tour during the meetings, and any number of activities in and around Miami Beach.

The pre-meeting tour of Florida agriculture began in Tampa, in North Central Florida and extended to Homestead, in South Florida. It was a 3-day tour. Sand, organic and marl soils, and associated agricultural crops including citrus, cattle, sugar cane, winter vegetables, and tropical fruits were emphasized. Phosphate mines and processing facilities were also visited.

The turfgrass tour, which took place on Thursday, visited various outstanding turf and ornamental plantings at golf courses, race tracks, private homes, sod farms, and the Orange Bowl. The Wednesday soils tour covered 240 miles to give tour attendees the opportunity to observe the unique landscape of southern Florida, representative soil profiles of the area, the second largest body of fresh water wholly within the U.S., organic soil subsidence, and the natural vegetation of the Everglades.

A total of 3,010 persons attended the Miami Beach meetings. Society officers, division chairmen, the Florida Local Arrangements Committee headed by C. F. Eno and D. E. McCloud, and the ASA Headquarters Office Staff were responsible for the planning and co-ordination of all meeting activities.

A number of society members were recognized during awards presentation program at the annual banquet. Samuel L. Tisdale, vice president of the Sulphur Institute, received the Agronomic Service Award. Robert F. Chandler, director of the Asian Vegetable Research and Development Center, in Taiwan, was the recipient of the International Service in Agronomy Award. The Crop Science Award was presented to Edgar E. Hartwig, research agronomist with USDA-ARS in Stoneville, Mississippi and the Soil Science Award was presented to Edgar E. Lemon, soil scientist with USDA-ARS in Ithaca, New York.

David P. McGill, professor of agronomy at the University of Nebraska, was the recipient of the Agronomic Education Award. Two CIBA-Geigy Awards in Agronomy were presented at this meeting. The award includes a midsummer trip to Europe. Though the 1972 awardee had already taken his trip, he was recognized at this meeting. By honoring the 1973 award recipient at this time, the recognition and trip were put into proper perspective. The 1972 CIBA-Geigy Award recipient was John G. Clapp, Jr., associate professor of agronomy and extension soybean specialist, North Carolina State University, Raleigh. Larry S. Murphy, associate professor of agronomy, Kansas State University, Manhattan, was the 1973 CIBA-Geigy Award recipient. The CIBA-Geigy Award in Agronomy is sponsored by Geigy Agricultural Chemicals.

The 1972 recipient of the Edward W. Browning Award was Orville A. Vogel, research agronomist, USDA, and professor of agronomy, Washington State University. The award is administered by the New York Community Trust and the recipient is selected by the ASA. The award is designed to recognize an individual who has made outstanding achievements in the improvement of food sources.

Irvin C. Anderson was the recipient of the Crops and Soils Magazine Award for his article entitled "Crops of the Future". Honorable mention certificates were presented to J. B. Jones and Raymond Baker for their articles published in 1971 issues of the magazine. Citations for this and other awards appear in this issue of the Agronomy Journal.

The SSSA luncheon on Tuesday was the site for passing the gavel to P. F. Low, Purdue University, and welcoming him in as the new President of that society. A. R. Bertrand, Texas Tech University, was presented as the new Vice President and S. R. Olsen, SWCRD/ARS/USDA, Ft. Collins, Colorado became Past President.

### **Annual Meeting 1973**

The 65th Annual Meeting of the American Society of Agronomy, the Crop Science Society of America and the Soil Science Society of America will be held in Las Vegas, Nevada, from 11- 16 November 1973.

The theme selected for this year's meeting is: A New Look at Energy Sources. More than 1000 research and invited papers will be presented. Three professional tours have been arranged.

Information on the meeting as well as on joining the society can be had by writing to:

**Dr. Matthias Stelly**  
Executive Vice President  
ASA, CSSA, SSSA  
677 South Segoe Road  
Madison  
Wisconsin 53711, USA.

### **All-Union Society of Soviet Soil Scientists**

On 26 October 1971 the Presidium of the Soil Society approved the establishment of the Subcommittee on Micromorphology, attached to Commission V of the Society.

As Chairman has been chosen Prof. G. V. Dobrovolsky and as Secretary Dr. T. D. Morozova.

The following people take part in the work of the Subcommittee:

Drs. V. A. Targulyan, A. V. Romashkevitch, N. G. Minashina, E. V. Parfenova, T. V. Tursina, E. A. Yarilova, K. N. Fedorov, M. I. Gerasimova, S. A. Shoba and A. U. Polyakov.

Correspondence could be directed to:

**Prof. G. V. Dobrovolsky**  
Dean of the Soil Department  
Moscow University  
Moscow B-234, USSR.

### **Soil Science Society of Ceylon**

The Soil Science Society of Ceylon held the 4th Annual General Meeting on 16 July 1973 and the following members were elected for the General Committee:

President: Prof. F. S. C. P. Kalpage  
Vice-President: Dr. A. W. R. Joachim  
General Secretary: Dr. C. S. Weeraratne  
Faculty of Agriculture  
University of Ceylon, Peradeniya  
Treasurer: Mr. V. Pavanadasivam  
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In addition to the normal activities, the Society intends to hold two seminars, one on Systems of Soil Classification in October 1973 and the other on Agrochemicals, in January 1974.

MISCELLANEOUS NEWS — INFORMATIONS DIVERSES  
VERMISCHTE MITTEILUNGEN

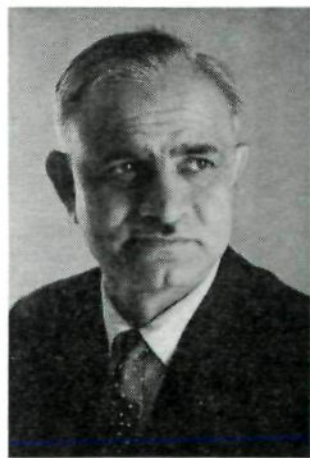
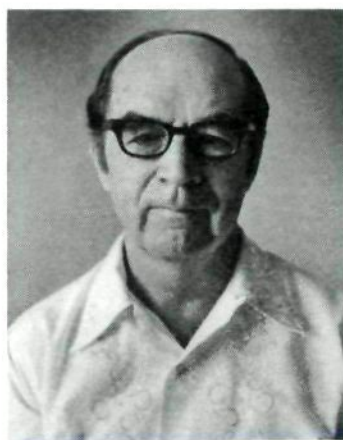
The International Crops Research Institute  
for the Semi-Arid Tropics (ICRISAT), Hyderabad, India

The Consultative Group on International Agricultural Research, consisting of 27 international organisations, governments and foundations, and the Government of India are collaborating to establish the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). The Institute will have its headquarters near Hyderabad where a 1360 ha site has been provided by the Government of India. The experimental area of the farms consists of both red and black soils which are typical of such climatic regions.

ICRISAT will serve as (a) a world center for the improvement of sorghum, millet, pigeon peas, and chick peas; (b) a center to promote the development and demonstration of improved cropping patterns and systems of farming which optimize the use of human and natural resources in the low rainfall, unirrigated, seasonally dry and semi-arid tropics; and (c) a center which may undertake such other programs or extensions of these programs as its Governing Board may determine.

ICRISAT, like sister institutions — International Rice Research Institute (Philippines), International Wheat and Maize Improvement Center (Mexico), International Institute for Tropical Agriculture, and International Institute of Tropical Agriculture (Nigeria) — will be an autonomous, international, philanthropic, non-profit, tax exempt, research, educational, and training institution. It will be administered by a Director to be selected by the Governing Board. The Director will be responsible for the operation and management of the Institute and for assuring that the objectives and program of the Institute are properly developed and carried out. He will be a member of the 15 man Governing Board.

Financial support for the Institute will be provided by members of the Consultative Group. The capital costs, including site development and facilities, buildings, and equipment, are estimated at ten to twelve million dollars over the next three to four years. The Institute, when fully developed, will have a senior professional staff of thirty six senior scientists selected from various countries of the world including India, who will be selected solely on the basis of professional merit. Junior scientists and other supporting staff and employees will be recruited largely from within India.



Dr. R. W. Cummings (American) is the Director of the Institute and Dr. J. S. Kanwar (Indian) is the Associate Director. Dr. B. A. Krantz (American) has joined as an Agronomist, Dr. H. Doggett (British) as Plant Breeder, Dr. J. Kampen (Dutch) as an Agricultural Engineer, Mr. E. W. Nun (American) as Engineer & Experimental Station Officer, Dr. A. D. Leach (American) as Physical Plant Development En-



gineer. An Economist and a Plant Physiologist will join shortly, while efforts are being made to recruit other international staff and the local supporting staff.

Activities in which the Institute will engage include the following:

- a. Research on practical and theoretical problems including plant breeding related to the production of sorghums, millets, chick peas, and pigeon peas, and the cropping and farming systems in which these crops are major components. This Institute will lay emphasis on Soil & Water Management and Land use planning in Semi-Arid Tropics.
- b. Collection, evaluation, maintenance, multiplication and distribution of basic germ plasm and of improved plant materials for use in breeding, improvement, and production programs of national and regional efforts.
- c. Publication and dissemination of research results.
- d. Organisation of periodic conferences, forums and seminars on problems related to the Institutes objectives.
- e. Training of scientists who will be involved in research, education, and action programs.
- f. Assistance in the development of appropriate educational research and extension institutional arrangements in cooperating countries.
- g. Establishment and operation of an information centre and library.

A Memorandum of Agreement between the Government of India and The Ford Foundation, acting on behalf of the Consultative Group on International Agricultural Research and providing for the establishment of ICRISAT, was signed on March 28, 1973. The Institute has now been organised within the terms of that agreement and its constitution has been sponsored by the World Bank and FAO.

The Government of Andhra Pradesh and the Government of India have extended full cooperation in the establishment of the Institute. During the first meeting, the Board Members visited the site of the Institute, a 1360 hectare tract of land provided by the Government, adjacent to the Bharat Heavy Electricals Township, Ramachandrapuram, about 16 miles from the Begumpet airport adjoining the highway toward Bombay. Experimental work has already been started on the site. Plans are afoot to construct the buildings and carry out all the research activities at the site selected for the purpose.

Dr. R. W. Cummings is the Director of International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India. Prior to his taking-up the present assignment, he was Director of the International Rice Research Institute, The Philippines. He was honoured by the American Society of Agronomy for his outstanding contribution in International Agronomy. He was also given a Centennial Award for outstanding service by the Ohio State University in 1969. In recognition of his services to the cause of agriculture and education in India, the Government of India dedicated a laboratory at the Indian Agricultural Research Institute in his name.

He was born on December 13, 1911 at Reidsville, North Carolina, USA. After a distinguished academic career in North Carolina State University, he took his Ph. D. (Soil Science) from The Ohio State University in 1938. He has served in many important positions in agricultural research and education in the USA. He was Professor of Agronomy in North Carolina State University and Director of Research in the same Institution till 1954. From 1955 onwards, he has been concerned with International Agricultural, Research and Education programmes in many developing countries, such as Peru, India, Indonesia, Phillipines and Ethiopia. He was Associate Director of Agricultural Sciences in Rockefeller Foundation from 1936 - '68, Program Advisor in Agriculture for Asia and the Pacific for Ford Foundation during 1971 - '72. He has served the cause of Indian Agricultural Research and Education from 1957 tot 1966. He has served on various international committees, agricultural missions and consultancy agencies. His major contribution to International Agriculture has been the development of a sound system of Post Graduate Research and Education in India and the Organisation of the Indian Agricultural Research Council. He is a renowned soil scientist and has made notable contributions in the field of agricultural research and education, particularly, in the developing countries.

Dr. J. S. Kanwar is the Associate Director of International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India. Prior to his taking up the present post, he was Chairman of the International Group on Soil Science under



the auspices of FAO. Member of the Indian delegation to the UN Conference in Stockholm and Consultant to the Asian Development Bank and FAO.

Formerly he was Deputy Director General, Indian Council of Agricultural Research, New Delhi. He is well-known for his work on soil fertility, micro-nutrients and sulphur, quality of irrigation water and soil salinity problems.

For the biennium 1964 - 1965, the Rafi Ahmed Kidwai Memorial Prize was awarded to Dr. Kanwar for his notable contributions in the field of Agricultural Chemistry.

He was elected Vice-Chairman for Commission VI of the ISSS for the years 1964 - 1968. (see also Bulletin 34, 1969).

### **European Society of Nuclear Methods in Agriculture (ESNA)**

Objectives:

Agricultural research relies increasingly on modern equipment and methods to achieve its ultimate goal, namely an improvement in the quality and quantity of the agricultural product. The emphasis in developing countries is on quantity as well as quality, whereas in developed countries the emphasis is towards quality alone. Improvement must be achieved without disturbing the environment and exhausting natural resources, not only because this is necessary for agriculture itself, but also because environmental disturbances are becoming a threat to Society as a whole.

The modern agricultural scientist must be able to master sophisticated scientific techniques and equipment. For some of these techniques a specialized training, involving active participation in interdisciplinary projects, is necessary prerequisite. NUCLEAR METHODS have to be mastered in this way.

This does not exclude the possibility that after an adequate development period these techniques might become routine procedures in any laboratory of agricultural science. In fact, this has happened already with the simpler forms of tracer techniques.

But to optimize the application of these techniques, special laboratories or departments have been established in many countries. These institutions are characterized by integrated research, in which physicists, chemists, biologists and agricultural scientists participate and which have highly sophisticated nuclear instruments, including irradiation facilities.

The prospects for "nuclear agriculture" are very broad if all the potential applications are considered, i.e. for plant and animal breeding, for the control of pests and diseases, in food technology and marketing, in soil-, plant- and animal science. Because of the interdisciplinary nature of "nuclear agriculture" it is very desirable to bring scientists of different disciplines together, from time to time, to exchange ideas and discuss results in "working groups".

The European Society for Nuclear Methods in Agriculture (ESNA) has set up a series of such working groups for Europe as a whole. For soil scientists, the working group on "Nuclear techniques in the study of soil-plant relationships" may be of principle interest, but working groups including those on "Radiation analysis" and "Environmental pollution" may also be of interest.

ESNA was founded in 1969 in Wageningen, and has held its annual meetings since then in Dubrovnik, Hannover, Budapest and Leuven.

The 1974 Annual meeting will take place in Bucarest from 19 - 23 September.

Besides the annual meetings, where all working groups meet in parallel sessions, the working groups sometimes organise extra meetings in cooperation with national or international symposia. The discussion on "Use of Nuclear techniques in study of Accumulation and Translocation of Nutrients and Regulators in Plant Organisms" organised in cooperation with the Polish Academy of Sciences, Warsaw (Poland) and the Research Institute of Pomology, Skierniewice (Poland) is an example of such a meeting.

ESNA working group meetings have an informal character.

Usually a few speakers give short introductions on selected topics so that sufficient time is available for fruitful discussion. Above all, priority is given to those who wish to discuss technical difficulties or research proposals.

The committee of the society is composed of 15 members residing in: Belgium-1, Hungary-2, Italy-1, Netherlands-2, Poland-1, Rumania-1, Sweden-1,

Switzerland-1, United Kingdom-1, Fed. Rep. of Germany-1 and Yugoslavia-3.  
Information on forthcoming meetings can be obtained from

**P. H. van Nierop**  
Secretary, ESNA  
ITAL  
P.O. Box 48  
Wageningen, Netherlands

**M. J. Frissel**  
Chairman Working group  
Soil-Plant Relationships ESNA  
Wageningen, Netherlands

**SYMPOSIUM ON ISOTOPES AND RADIATION TECHNIQUES  
IN STUDIES OF SOIL PHYSICS,  
IRRIGATION AND DRAINAGE IN RELATION TO CROP PRODUCTION**

**Vienna, 1 - 5 October 1973**

The Symposium was convened jointly by the Food Agriculture Organization of the United Nations and the International Atomic Energy Agency to review the progress that has been achieved through the use of nuclear techniques in soil physics and irrigation science. It was of a series of symposia held by the Joint FAO/IAEA Division of Atomic Energy in Food and Agriculture since its establishment in 1964, devoted to the broad subject of soil-plant relationships.

On the first day of the Symposium several papers were presented on the actual and potential use of nuclear techniques and radiation equipment in pursuing soil physics and irrigation research. Another full day was spent on discussions about the combined movement of solutes and water in soil. Some experimental information recently obtained, particularly with the help of radioactive tracers, was presented. Considerable time was devoted to a discussion on the "State of the Theory" concerning solute displacement in soil.

Where both the neutron gauge and  $\gamma$ -ray absorption techniques have proved to be invaluable with regard to in situ studies of the movement of water through soil, considerable attention was paid both to the new developments with regard to automatic scanning devices and to some results obtained therewith. Perspectives with regard to irrigation studies were discussed at a separate session.

The remaining sessions were devoted to a fairly broad scale of papers concerning soil-water-plant interrelations with some accent on water use efficiency under field conditions.

**C. Bolt**  
Agric. University  
Wageningen, Netherlands

## IMO/WMO Centenary

### One hundred years of International Co-operation in Meteorology\*

In view of man's complete dependance upon the weather for his very existence, it is not surprising that one of the first subjects in which there was fruitful international co-operation was meteorology. One hundred years ago, the First International Meteorological Congress met in Vienna.

Long before the study of atmospheric environment started in the Western World (fourth century B.C.), the Chinese had already produced agrometeorological texts. In India information on the meteorology of the Punjab and the north-west Indian sub-continent was available. Also the ancient Egyptians were well aware of the seasonal flooding of the Nile.

The earliest-known systematic recording of local weather is believed to date from the early fourteenth century, while the first network of observation stations is thought to date from the middle of the seventeenth century. This was made possible by the invention of certain instruments for measuring the physical elements. More than a century later an international network of thirty-nine weather observation stations was established. Fourteen of these were to be found in Germany, four in the United States and the remainder in other countries. The invention of the electric telegraph revolutionised the possibilities for weather forecasting and the first weather maps based on telegraphic data were displayed in Washington in 1850 and in France in 1855.

The growing importance of maritime transportation called for accurate, dependable and regular weather information. The First International Meteorological Conference (Brussels, 1853) concerned itself largely with maritime meteorological problems. Stimulated by the success of the meeting, a few meteorologists organised a conference to reach agreement on standardising methods of observation and analysis (Leipzig, 1872). They also paved the way to hold the First International Meteorological Congress the following year. This congress was held in Vienna from 2 - 16 September 1873 and 32 representatives of 20 governments participated. With the creation of a Permanent Committee, consisting of seven members who were all directors of Meteorological Services, the foundation was laid for the establishment of a permanent body to deal with meteorological problems which face mankind in his varied activities.

It is this event which was celebrated in Vienna and Geneva in September 1973.

The Second International Meteorological Congress (Rome 1879) adopted a resolution to establish an International Meteorological Committee (IMC), consisting of nine members with responsibilities similar to those of the Permanent Committee.

The IMC looked after the international co-operation in meteorology for about 70 years. The Congress gave full support to the First International Polar Year (1882 - 1883) and entrusted the IMC with certain tasks related to it. This was the beginning of highly organised, international, synchronised scientific observations which have continued to the present day with such programmes as the World Weather Watch and the Global Atmospheric Research Programme.

The First Conference of Directors of Met. Services (CD), attended by thirty-one directors, was held in Munich in 1891. The Conference elected an International Meteorological Committee of fourteen members. During the period 1891 - 1914 the principal achievement of the IMC (the name International Meteorological Organization — IMO — came into formal use at a later date) was the establishment of Technical Commissions, such as the Commission for Agricultural Meteorology which was created in 1913.

These commissions became so active that the principal role of the IMC was largely that of co-ordination. Their terms of reference were not greatly different from to-day's Technical Commissions of the World Meteorological Organization (WMO). The status of IMO became increasingly important. During many decades numerous discussions were held on the question of international co-operation. Should this take place at an official inter-governmental level, or should it continue to be dealt with by the heads of the Meteorological Services in an unofficial capacity? The answer to this question was given on the 23rd of March 1950 (a date celebrated annually as World Meteorology Day) when the World Meteorological Convention came into force. It defined the purposes of a new organisation so that

\* Based upon an article with the same title in WMO Bulletin,

in 1951 the non-governmental IMO was replaced by the inter-governmental World Meteorological Organization (WMO), being a specialised agency of the United Nations. To carry out the enlarged task the Secretariat which was initially installed at the Royal Meteorological Institute at De Bilt, Holland, in 1926, had to be strengthened considerably.

It is beyond the scope of this brief review to even mention the highlights of the achievements of WMO. It played a very important role in achieving uniformity of meteorological practices and procedures, mainly through the issue of Technical Regulations. These regulations are binding upon Members, now totalling 136 countries and embracing nearly the whole world. The ISSS, as a consultant to WMO, is mainly concerned with the work carried out by the Commission for Agricultural Meteorology. During the last years this Commission has given special attention to agrometeorological services, in support of the world campaign against hunger. This takes the form not only of publications, conferences etc., but also of training provided to agricultural meteorologists at all levels, particularly from developing countries.

### **International Water Resources Association (IWRA)**

The principal objectives of IWRA, which has been established recently, are:

- To advance water resources planning, development, management, administration, science, technology, research and education on an international level.
- To establish an international forum for planners, administrators, managers, scientists, engineers, educators and others who are concerned with water resources.
- To encourage co-ordination and support of international programs in the field of water resources, including co-operation with the United Nations and its agencies and other international and national organizations in activities of common interest.

The Officers are:

|                   |                            |
|-------------------|----------------------------|
| President         | : Ven Te Chow              |
| Vice-President    | : K. L. Rao                |
|                   | : Florentino Briones       |
|                   | : José Leite de Souza      |
|                   | : Farid N. Mikhail         |
| Secretary-General | : Gabor M. Karadi          |
|                   | Science Complex Building   |
|                   | University of Milwaukee    |
|                   | Milwaukee, Wisconsin 53201 |
|                   | USA                        |
| Treasurer         | : Roy A. Williams          |

### **International Seminar on Soil Management and the Development Process in Tropical America Cali, Colombia, 10 - 14 February 1974**

This seminar is organized by the Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia. A field trip — with limited number of participants — to Colombia, Peru and Brazil is planned to take place from 14 - 24 February, 1974.

The objectives of the seminar are (1) to provide an opportunity for leading soil scientists from Latin America, the United States of America and also from international institutes, who have an interest in the problems of soils in the tropics, to report and discuss recent relevant advances in tropical soils research related to the development process in tropical America; (2) to discuss the possibilities for establishing an international research network among tropical soil scientists; and (3) to provide an opportunity for a limited number of participants to visit major research centers involved in soils work in the tropical areas of Colombia, Peru and Brazil.

The following sessions will be held: soil genesis and classification; soil-water relations; research network in tropical soils; soil fertility; soil fertility evaluation; and soil management systems.

Presentations are in English or Spanish, with simultaneous interpretation.

No registration fee will be charged for attending the seminar, costs of the field trip depend on the number of people.

Information from:

**Conferences and Symposia**  
**CIAT**  
**Apartado Aéreo 67 - 13**  
**Cali, Colombia**  
**Cables: CINATROP**

**International Symposium on Geomorphic Processes in Arid Environments**  
**Jerusalem and Elat, Israel, 18 - 23 March 1974**

The Commission on Present-Day Geomorphic Processes, International Geographical Union, with the co-sponsorship of the Commission on Erosion and Sedimentation, IAHS, the Israel Academy of Sciences and Humanities, the Israel National Committee, IGU, and the Hebrew University of Jerusalem are organizing this symposium.

The objectives are (1) to review the present state of research on geomorphic processes in arid and semi-arid environments and (2) to discuss in detail specific topics of current interest, with the object of promoting future international co-operation in research by means of comparable methods and standards.

Topics are: processes in deserts; dynamics of landform relationships in deserts; techniques, and applied geomorphology in deserts. Eight working sessions of two hours' duration will be held. The field program will comprise three days. Two post-symposium excursions have been arranged: a Desert Field Trip from 24 - 26 March and a trip to Northern Israel from 27 - 28 March, during which two panel discussions take place.

Information from:

**Organizing Committee of the Int. Symp.**  
**on Geomorphic Processes in Arid Environments**  
**Dept. of Geography**  
**The Hebrew University**  
**Jerusalem 91000, Israel**

**XIIth International Grassland Congress**  
**Moscow, USSR, 11 - 20 June 1974**

The congress will study the problem "Soil-Plant-Animal-Animal Products" in plenary and sectional sessions. Six pre- and post-congress tours lasting 2 - 9 days have been arranged, taking place between 1 and 10 June, resp. 21 and 30 June 1974.

Information from:

**Prof. V. G. Iglovikov**  
**Secretary-General of the Organizing Committee**  
**of the XIIth International Grassland Congress**  
**Orlikov per. 1/11, Room 832**  
**Moscow 107139, USSR**



**VIIIth International Plant Protection Congress  
Moscow, USSR, 21 - 27 August 1975**

For this congress the following topics for plenary sessions have been selected: Plant protection in the USSR; Plant protection and the environment; Economics of plant protection; Chemical control; The role of meteorology in forecasting; Biological control; Integrated control.

Topics for sections are: Economic problems; Progress in the study of biology of pest organisms and the development of forecast methods; Chemical control; Plant protection, care of man and nature conservation; Biological and genetic control; Integrated plant protection control; Plant protection and quarantine- international co-operation.

Information from:

**Prov. V. A. Lebedev  
Secretary-General of the Organizing Committee  
of the VIIIth Int. Congress of Plant Protection  
Orlikov per. 1/11, Room 478  
Moscow 107139, USSR**

**New Conversion Slide Rule**

This handy conversion slide rule from the American Society for Testing and Materials provides information about the most frequently converted area, volume, mass, force, pressure, stress, capacity, length, gage, and temperature measurements.

The price of the slide rule is US\$ 5.— and 5% shipping charges for countries outside U.S., Canada and Mexico. Orders mentioning "ASTM Conversion Slide Rule, US Customary to SI Units E 380" may be sent to

**American Society for Testing and Materials  
1916 Race Street  
Philadelphia  
Pennsylvania 19103, USA**

**New Slide Rule and Slide Chart**

A new pocket-size slide rule that relates X-ray critical absorption and emission energies to atomic number and their corresponding elements has been produced by Qanta/Metric Corporation.

The new slide chart has readings for both K-Series and L-Series tables, including weighted averages. Tables are calculated in KeV. A special slide scale for converting between KeV and angstroms is also included. Copies are available on letterhead request. For further information, contact:

**Warren Wood  
Qanta/Metric Corp.  
120 Industrial Way  
San Carlos  
California 94070, USA**

**LATIN AMERICAN LAND AND WATER BULLETINS**  
**FAO Regional Office for Latin America, Santiago, Chile**

Especially during the last two decades many Latin American countries have embarked on ambitious land and water development projects. These need to take into account the qualities of the land and water conditions to ensure the success of new and more advanced farming methods. A wealth of data on soil and water resources in Latin America has been, and is being accumulated. However, use of these data is limited by lack of any general approach or standardization in their presentation and interpretation. Recognizing the need for technical assistance in the preparation of systematic multidisciplinary land and water evaluation methods, a FAO/UNDP Regional Project on Systematic Land and Water Resources Appraisal became operational in 1971 for a proposed duration of four years. Under the able leadership of the Co-ordinator, Dr. Klaas Jan Beek, the project organized the First FAO/UNDP Regional Seminar on Systematic Land and Water Resources Appraisal, which took place in Mexico, 8 - 14 November 1971. The seminar was attended by 39 participants from 23 countries, 32 representatives of international and inter-governmental organizations, and about 170 observers.

The twenty-four papers presented have been included in the final report of the seminar, Bulletin 1 in the new series Latin American Land and Water Bulletins, issued by the FAO Regional Office for Latin America. The summaries of the discussions and the conclusions and recommendations of the seminar clearly show the necessity for a regional assessment of the land and water resources potential to ensure a maximum return from the limited financial means available for their development.

This very interesting and valuable report on a memorable event deserves a wide circle of readers, not only in South America but also in other areas of the developing world, such as Africa, where many of the same problems do occur.

Also issued in the series are:

- Bulletin 2. Review of Soil Survey Methods in Latin America by A. van Wambeke.  
Bulletin 3. Land Evaluation for Rural Land Use Planning by K. J. Beek and J. Bennema.

The Bulletins are also published in Spanish.

Further information can be obtained from the FAO Regional Office for Latin America, Casilla 10095, Santiago, Chile.

**International Soil Museum**  
**Utrecht, Netherlands**

**SOUCHIER, B., Evolution des sols sur roches cristallines à l'étage montagnard (Vosges). Mém. Serv. Carte géol. Als. Lorr. No. 33, 1971. Pp. 134.**

This study deals with soil formation between 300 and 1000 m above sea level on granitic parent material in the French Vosges. In particular, the sequence of "sols bruns - sols bruns ocreaux - sols ocre podzoliques - sols podzoliques - podzols" is the subject of various investigations. The author has attempted to elucidate the physico-chemical and bio-chemical processes operating in soil genesis and the factors which control them. The implications of these processes and factors, as well as their importance in classification, are considered.

Detailed investigations have been carried out including the chemical composition of the different humus forms, mobility of aluminium and iron, the behaviour of the clay fraction, the pedoclimate and the composition of the parent material. The significance of and relationship between brunification and podzolization in these soil types are discussed. Additional information is obtained from a number of experiments involving percolation through soil columns.

Comparative studies of related soil types such as are contained in this book merit attention and could be repeated elsewhere. The author is a member of the group of research workers lead by Professor Duchaufour whose studies form a

good example of an attempt to understand and solve the pedological problems of the region under consideration.

**J. J. Reijnders**  
**Soils Institute**  
**Utrecht, Netherlands**

**LEE, K. E. and WOOD, T. G. Termites and Soils. Academic Press Inc., London 1971.**  
**Pp. 251. Price US \$ 11.50.**

The main purpose of this book is to give a review of the ecology of termites. The opening chapters are devoted to their biology, including classification, nest systems and galleries as well as their distribution. Later chapters discuss topics which are of more direct interest to pedologists such as their chemical and physical effects upon soils and associated clay minerals. The influence of termites on the soil profile and its horizons is manifest in the form of organic matter, cementation and the in-filling of burrows. These, and other properties, are linked with responses to plant growth, agriculture, soil fertility and erosion hazards. A clearly presented section on the micromorphology of soil materials influenced by termites is an interesting facet of the work.

Soil scientists working in tropical regions will find this book a useful guide, as termites play an important role in the decomposition of organic material and in various other aspects of soil development.

**J. J. Reijnders**  
**Soils Institute**  
**Utrecht, Netherlands**

**BABEL, U., Moderprofile in Wäldern: Morphologie und Umsetzungsprozesse.**  
**Eugen Ulmer, Stuttgart, 1972. Pp. 120. Price DM 21.60.**

In this book the author has attempted to describe natural regularities (in morphology and processes) valid for all forms of Moder-humus under forest in Central Europe. Four types found under beech, beech and oak or fir trees (widely distributed in W.-Germany) have been studied. The results of this study have been compared and verified with a small number of other humus forms.

The research is primarily morphological (both macro- and micro-) together with histophysical and histochemical reaction tests to study the decay of plant fibres and material such as lignin, cellulose, cutin and suberin. The work is based on parameters which can be described as morphological and which are defined without genetic or ecological presuppositions. They are quite extensively described and their selection is reasonable (they could be considered as a sort of "Guideline for describing Moder-humus forms"). With the help of these parameters Babel arrives at a formulation and coding of the horizons present.

In view of the fact that up to the present no clearly defined morphological system for the description of humus forms was available, it is certainly worthwhile to test the utility of the system which Babel now proposes. In this connection it must be noted, however, that his manner of description is not always objective. At times it is only possible in relation to other humus forms.

In the chapter on the stereomicroscopical study of humus forms, the author gives a brief discussion of the soil fauna active in Moder-humus forms. He considers that it is useful to establish the presence of these creatures with the stereomicroscope. Observations made in this way cannot, however, be considered as of great value.

It is to be regretted that Babel does not give any acceptable definition of "Moderhumus forms" in this book. It would also have been better if he had included a brief discussion of the soil fauna when explaining this term. It is above all a pity that the terms humus form and humus profile are used in identical sense. A difference in the concept in this respect has not been made clear.

In spite of these few critical remarks this small book is a valuable addition to our knowledge of the morphology and dynamics of forest soils in Central Europe.

**L. Bal**  
**Soils Institute**  
**Utrecht, Netherlands**

(by courtesy of Geoderma).

**BOURGEAT, F., Sols sur socle ancien à Madagascar. Mémoires ORSTOM No. 57. ORSTOM, Paris, 1972. Pp. 335.**

This study of the ferrallitic soils formed on the ancient land surface of Madagascar between latitudes 18° and 20° South, comprises the differentiation and chronological interpretation of soils developed during the Quaternary. In the various chapters geology, morphology, climate and the paleo-climate as well as the vegetation have been described. Several sections are devoted to erosion and solifluction in relation to soil formation with reference to surface features, stone lines, cuvettes, reworked weathered material (remaniement), surface erosion (appauvrissement). The main ferrallitic soil types are described and the alteration and neof ormation of secondary materials are given.

Regarding the latter subject various forms of aluminium accumulation are studied. Hypotheses have been developed for the formation of gibbsite by primary and secondary weathering of minerals in connection with the erosion phenomena, renewed weathering, time and climate. In addition, a number of suggestions have been given concerning the activity and importance of the iron compounds, their mobility, their role in crust-formation and influence on structure and colours in these soils.

In the appendices detailed descriptions and analytical data of 46 profiles have been given. 18 black/white pictures illustrate landscapes and concretionary forms of gibbsite.

**J. J. Reijnders**  
**Soils Institute**  
**Utrecht, Netherlands**

**DE WIT, C. T. and VAN KEULEN, H., Simulation of transport processes in soils. Centre for Agricultural Publishing and Documentation (PUDOC), Wageningen, 1972. Pp. 100. Price Dfl. 15.—.**

This book has been published in Pudoc's series on computer simulation in agriculture and its supporting sciences: Simulation Monographs. The present publication provides the reader with good information on how to work with computer models in transport processes. It discusses the transport of heat, salt and water and points out in a concise way the difficulties encountered in the models.

It is regrettable that CSMP has been used as computer language, since many computers do not have a compiler for this language. The more common languages as ALGOL and FORTRAN would have been more useful, although it will be no problem for someone familiar with these languages to read the book and to write the appropriate programmes.

**N. M. de Rooij**  
**Soils Institute**  
**Utrecht, Netherlands**

**FAUCK, R., Les sols rouges sur sables et sur grès d'Afrique Occidentale. Mémoires ORSTOM No. 61. ORSTOM, Paris, 1972. Pp. 257. Price FFr. 98.—.**

Red Ferrallitic soils, formed on more or less clayey sand and sandstone of different age cover important areas in West Africa and are also known from other regions. For the study reviewed here eight reference profiles, representative for large areas, were selected in Senegal, Upper Volta, Togo and Dahomey.

Notwithstanding the great distance between the profiles and the different parent materials, it is remarkable that the soils present certain clear morphological similarities. Detailed study of the parent materials has shown that these have the following characteristics in common: rich in quartz, poor in weatherable primary minerals, presence of ironoxydes and iron hydroxydes, rich in medium and coarse sand. All soils are characterized by a homogeneously coloured rubified argillic B-horizon, which could reach a thickness of 6-8 m. It contains cemented sand grains, the "pseudo sands". Soils and their environment are treated in the first chapter and this is followed by a most interesting section on the different processes of transformation of the various parent materials.

Contrary to the ideas of many pedologists, the authors come to the conclusion that these soils can also be formed under present climatic conditions prevailing in a part of the region.

Pedologists unable to read French might have translated the concise, though complete, summaries following each chapter of this interesting and clearly written publication.

A valuable contribution to our knowledge on some soils in intertropical regions!

**International Soil Museum  
Utrecht, Netherlands**

**FRIDLAND, V. M., Structure of Soil Cover. "Mysl" Publishing House, Moscow, 1972. Pp. 423, 69 figures and 38 tables. Price 2 roubles, 10 cop.**

In 1965, the author of this monograph (Head of the Department of Soil Genesis, Geography and Classification, Dokuchaev Soil Institute) introduced a concept of the structure of soil cover as a universal phenomenon, incorporating various forms of spatial change of the elementary soil areals, differently genetically interrelated and forming a certain spatial pattern. The changes of components of the structure of soil cover govern the regularities of soil geography in small regions, whereas the changes of different forms of soil cover structures govern the laws of soil geography in vast territories.

The monograph deals with all aspects of soil genesis, geography and utilization associated with the structure of soil cover. The monograph consists of 10 chapters. Chapter I sets forth the principal concepts of the structure of soil cover treated as a system. Chapter II is devoted to the history and development of notions about the structure of soil cover. Chapter III contains the definition, and characteristics of a soil areal as an initial unit in the typological and regional systems of the soil-geographical taxonomy. Chapter IV deals with more complicated units of soil cover: soil combinations — elementary constituent parts of the structure of soil cover and methods suggested for their qualitative and quantitative characterization. Chapter V discloses the factors responsible for the formation of soil combinations. Chapter VI considers the evolution of soil combinations and structures of soil cover. Chapter VII presents the typology of soil combinations. Chapter VIII dwells on the main features of the soil cover structures of the Soviet Union, their regularities and geography. Chapter IX describes the methods for studying the structure of soil cover (comparative-geographical and historic approaches; qualitative-genetic; statistico-cartographic; statistico-analytical; functional-analytical; stationary-regime and logical analyses, methods). The last chapter contains materials on the utilization of data on the structure of soil cover for the solution of practical problems relating to soil mapping, soil regionalization, agricultural typization and inventory of lands. Special attention is paid to the prediction of changes in the soil cover under natural conditions and due to the activity of man.

The book can be recommended to all those interested in soil genesis, geography and cartography, and in the problems of utilization and conservation of soil resources.

**V. P. Belobrov  
Dokuchaev Soil Institute,  
Moscow, USSR**



**GUILLET, B., Relation entre l'histoire de la végétation et la podzolisation dans les Vosges. Thesis of the University of Nancy, France, 1972. No. CNRS: AO 7640. Pp. 146.**

The relation between the succession of vegetation types since late glacial times and podzolisation in coarse textured soils were studied by means of palynological investigations in the Western foot hills (300 m) and higher parts of the Vosges (900 m).

Information is given on the methods used to analyze and date the pollen. Profile descriptions are given in detail accompanied by analytical data and pollen diagrams. Consideration is given to the form and chemistry of the humus present in various types of podzols. Some critical features such as the mineralization of organic material in the Bh horizon, have been investigated, giving a wider background to this study.

The various aspects of the history of the podzolic soils, the sequence of various types of vegetation, the migration of pollen and the mutual relation to time form the interesting subject of this volume.

The contents of this publication are notable because the approach and techniques used do not conform to the routine analyses adopted in most soil science laboratories.

**J. J. Reijnders**  
**Soils Institute**  
**Utrecht, Netherlands**

**LAMOUREUX, M., Etudes sur les sols formés sur roches carbonatées. Mémoires ORSTOM No. 56. ORSTOM, Paris, 1972. Pp. 266.**

The main object of this study is the fersiallitic pedogenesis of past and present red soils developed on calcareous material at various heights above sea level in the Lebanon. Many pedological factors have been investigated such as colour, texture, organic matter, structure, acidity, phosphorous content, the active and total carbonate in the soil, the hardness and composition of the carbonate rocks, and the types of karst phenomena present. These factors and properties have been compared and several attempts have been made to find either mutual correlations or differences between the soil types, or correlations with the position of the soils in the landscape.

Some sections have been devoted to inheritance from the parent material, the occurrence of clay minerals, and the neoformation of them in various climatological belts in the region. At the end of the volume pictures have been given of silica, aluminium and iron present in these soils. This study demonstrates interesting details and aspects of soil developmental history in this part of the world.

**J. J. Reijnders**  
**Soils Institute**  
**Utrecht, Netherlands**

**PROCEEDINGS FIRST NATIONAL SOIL SCIENCE CONGRESS, Sofia, Bulgaria, 23 - 25 September 1969. Bulgarian Academy of Sciences Press, Sofia, 1972 Pp. 476.**

The first national soil science congress, organized by the Bulgarian Soil Science Society, was also attended by about 80 scientists from abroad. It is with pleasure that the appearance of the proceedings can now be announced. The publication contains the seven papers presented at the plenary assembly and the nearly sixty papers presented at the sessions on physics, erosion and microbiology (23 papers); soil chemistry, agrochemistry and fertilization (14 papers); and genesis and cartography of the soil (19 papers). All non-English papers have been provided with English summaries.

The publication shows clearly that growing importance is given to the role of soil science in the development of Bulgaria.

## **PROCEEDINGS SYMPOSIUM ON THE FUNDAMENTALS OF SOIL**

**CONDITIONING, Ghent, Belgium, 17 - 21 April 1972. Pp. 270. Price Bfr. 600.**

Of the 23 papers presented at the symposium four discuss processes which are fundamental to soil conditioning, like the interaction between polymers, bitumen emulsions, etc., with the inorganic- or complete soil. Four treat the effect of conditioners, crusts receiving special attention. To one of the causes of crust formation, slaking due to entrapped air, three papers are devoted. Pollution risk of bitumen application, history of conditioning, and type of structure to which the conditioner should be applied are treated each in onze article. Other subjects are: the FAO-IAEA effort, hybrid simulation, and soil structure aspects in two countries of the Far East.

As Professor De Boodt managed again to assemble a group of prominent soil scientists at Ghent, the quality of the papers warrants the purchase of this book. It can be obtained with Prof. Dr. M. De Boodt, Coupure Links 533, B-9000 Gent, Belgium.

**F. F. R. Koenigs**  
**Agricultural University**  
**Wageningen, Netherlands**

## **SOILS OF THE HUMID TROPICS. Committee on Tropical Soils, Agricultural Board, National Research Council. Published by the National Academy of Sciences. Washington. 1972. Pp. VII and 219. Price US \$ 7.95.**

Though there has been a considerable amount of research on tropical soils over the years, it is increasingly realized that a much greater effort will be required to solve many technical problems involved in the assessment of their most efficient use.

To identify the research that should receive first attention, the Agricultural Board of the US National Research Council established a Committee on Tropical Soils, consisting of twelve members from the US and abroad, all well-known for their experience in tropical soil science. It is rightly stated in the introduction that "Most tropical soil problems can be solved only where they exist; all imported assumptions, preconceptions, and prejudices must stand open to question."

Therefore, it has been tried in this concisely written book to distinguish the specific problems in the use of tropical soils from the guiding generalizations of soil science that have wide global applications.

After a listing of research needs thought to be of primary importance, excellent summaries of the present knowledge on soil survey, soil microvariability, physical properties of soils, fertilizers (both major and micronutrients), soil management systems, and soil testing and soil fertility evaluation are given. It comprises also a 1:50 million soil map of the tropical region, using the new USDA Soil Taxonomy. The book discusses mainly better-drained upland soils below 1000 m altitude. Vertisols and flooded rice soils are not treated.

The appendix contains brief summaries of reports on the status of tropical soils research in some countries and regions. A limited number of copies of the full report may be obtained from the author of the reports.

A valuable, lucidly written publication, which is not only of interest to soil researchers, but also to planners in the extensive and increasingly important tropical regions. It is also very profitable reading for advanced students in soil science.

**International Soil Museum**  
**Utrecht, Netherlands**

## **SZEGI, J., Editor. Proceedings of the Symposium on Soil Microbiology.**

**Akadémiai Kiadó, Budapest, 1972. Pp. 454. Price US \$ 18.20.**

The proceedings of the Symposium on Soil Microbiology, held at Budapest from 16 - 20 June 1970, volume II of the series Symposia Biologica Hungarica, contain sixtyfive papers, presented by research workers from nineteen countries on two major themes. The first is the microbiological transformation of plant residues

reaching the soil, and the second is the interaction between pesticides used in agriculture and soil microbes.

These two topics are very real indeed. It is well-known that micro-organisms basically influence the formation of soil fertility in the course of the transformation of soil organic materials. The effect of the use of chemicals — chemicalization — is one of the newer aspects of agricultural research, and papers on the interaction between soil micro-organisms and pesticides are certainly opportune.

**L. Bal**  
**Soils Institute**  
**Utrecht, Netherlands**

**BOCQUIER, G., Genèse et évolution de deux toposéquences de sols tropicaux du Tchad. Interprétation biogéodynamique.**

**Mémoires ORSTOM 62. ORSTOM, Paris, 1973. Pp. 350.**

**English abstract. Price Ffr. 120.**

In this highly interesting study two toposequences in Chad were analysed in a very detailed way. Chosen was one sequence of about 150 m length on granitic parent material in an inselberg landscape and one of about 120 m length on quaternary river deposits in the floodplain. Both toposequences consist of leached ferruginous soils, leached hydromorphic soils, planosols, solodized solonetz and vertisols. The relatively small size of the toposequences permitted the nearly continuous study of the lateral variations between the profiles as well as the vertical variations within the profile.

Based on broad to detailed morphological and analytical studies of the soils, ideas on the genesis and evolution of the two toposequences could be developed. The then following 'biogéodynamic interpretation' considers the toposequences as biochemical systems in which the lateral migration of material gives a connection between the eluvial upslope and the illuvial downslope environments. Finally, some applications of the biogéodynamic approach are given on problems of soil distribution, landscape geochemistry and geomorphology in the intertropical regions.

**International Soil Museum**  
**Utrecht, Netherlands**

**DE GLOPPER, R. J., Subsidence after drainage of the deposits in the former Zuyder Zee and in the brackish and marine forelands in the Netherlands.**

**Van Zee tot Land, publication No. 50 of the Rijksdienst voor de IJsselmeerpolders. Staatsuitgeverij, The Hague, 1973. Pp. 205. Price Dfl. 12.50.**

There are only a few places in the world where the effect of drainage on sediments which have relatively recently been deposited by water have been studied in detail. The long history of Dutch expertise in this field, which started more than 120 years ago, is well known. The publication reviewed is more evidence of the research activities carried out in conjunction with the reclamation of the former Zuider Zee (now called IJsselmeer).

Subsidence is regarded as "the phenomenon of an irreversible reduction in the pore space of the soil, eventually reflected in most cases in a drop in the surface level, as a result of an increase in the various forces exerted on the grain structure." It is caused by a drying-out of the deposits under the influence of evaporation and/or transpiration and its extent depends on the content of clay and organic matter, the drainage conditions of the sediment prior to emergence and after embankment, the kind of clay minerals and the climate.

At some locations in the IJsselmeerpolders, a drop in the surface level of not less than 150 cm can be expected to occur in the first century after emergence, while more than half of the area may subside between 75 and 125 cm. The subsidence has many consequences, some of which are of considerable financial significance.

The publication may be regarded as a synthesis of the many studies which have been made over the years to predict the subsidence with the greatest accuracy

possible. Attention is given to the methods used, the factors determining the extent of subsidence, the subsidence of the topsoil (the top 150 cm after subsidence) and subsoil in the IJsselmeer and brackish and marine coastal regions of the Netherlands.

This concise, clearly written, profusely illustrated and relatively low-priced publication is more than of only local interest; scientists engaged in comparable reclamation works in other areas of the world will certainly profit from studying it.

**International Soil Museum  
Utrecht, Netherlands**

**DRAINAGE PRINCIPLES AND APPLICATIONS, Volume II, theories of field drainage and watershed runoff. International Institute for Land Reclamation and Improvement (ILRI). Publication 16, Vol. II, Wageningen, 1973, Pp. 374. Price US \$ 9.50.**

This is the second volume in the series reviewed on page 17 of Bulletin 42. It presents the basic principles of land drainage by gravity and wells. It also deals with salt balances, leaching requirements, effects of irrigation on drainage, field drainage criteria, and mathematical models for different types of ground water flow and for watershed runoff.

The book can be used independently from the other volumes although, to avoid repetition, reference is often made to their chapters.

It has already been stated in Bulletin 42 that this series can be warmly recommended.

The publication is available from ILRI, P.O. Box 45, Wageningen, Netherlands. Please state Publ. 16, Vol. II and enclose the amount due. Cheques should be made payable to ILRI, Wageningen. For those who wish to purchase Vol. I (Introductory Subjects) also, the price of this volume is \$ 6.40.

**International Soil Museum  
Utrecht, Netherlands**

**FIEDLER, H. J. Methoden der Bodenanalyse.**

**Band 1, Feldmethoden. Verlag Theodor Steinkopf, Dresden, 1973, Pp. 239. Price 33.70 Mark.**

**Band 2, Mikrobiologische Methoden. Verlag Theodor Steinkopf, Dresden, 1973, Pp. 172. Price 28.50 Mark.**

Like the former books of Prof. Fiedler, Professor in Soil Science at the Technical University in Dresden, the present ones are concise instruction books for students in agriculture and soil-minded biologists, geographers, and geologists.

The first volume gives an introduction to the methods for study of the soil in the field, mainly as practiced in the German Democratic Republic. Attention is also given to rocks, rock and soil forming minerals and such aspects as soil sampling tools, preparation of lacquer peels and soil monoliths, photography of soils and other practical matter are also dealt with. The largest part gives rather detailed instruction on procedures for the assessment of soil characteristics and for the description of the soil. The classification of soils has only been touched.

The second volume treats the microbiological methods of analysis. It contains the quantitative and qualitative assessment of soil micro-organisms and methods to study microbiological processes in the soil.

These practical publications are regarded very useful for students, field workers, and laboratory technicians. Rather extensive bibliographies of mostly German publications could direct further studies.

**International Soil Museum  
Utrecht, Netherlands**

**GREENWOOD, L. L. and ROHRER, R. L., KWIC Index to the Commonwealth Bureau of Soils Annotated Bibliographies on Soils and Fertilizers. 1956 - 1972. Kansas State University Library, Manhattan, Kansas 66506, USA, 1973. Pp. 198. Price US \$ 10.—.**

Users of the Commonwealth Bureau of Soils Annotated Bibliographies on Soils and Fertilizers will be delighted to know of the newly published Index to 1553 annotated bibliographies.

The annotated bibliographies on soils and fertilizers is the second largest of a series of annotated bibliographies on 13 disciplines. Prepared by subject specialists, these bibliographies, depending upon the amount of literature on the subject, normally contain 20 to 100 citations with helpful annotations in English and cover a time span of 5 to 15 years. Bibliography number 1, Oxidation-Reduction Potential in Soils, contains 82 references and covers a period from 1930 to 1955. Number 1553, Some References to Lysimeters and Lysimetric Studies, contains 59 references for the period 1965 tot 1972.

Individuals interested in obtaining more information on the annotated bibliographies may write the Commonwealth Agricultural Bureau, Farnham House, Farnham Royal, Slough SL 2 3 BN, England. Those interested in obtaining the KWIC Index should contact the Kansas State University Library.

**O. W. Bidwell**  
**Kansas State University**  
**Manhattan, Kansas, USA**

**NGUYEN KHA, Recherches sur l'évolution des sols à texture argileuse en conditions tempérées et tropicales. Thesis of the University of Nancy, France, 1973. No. CNRS: AO 8033. Pp. 170.**

This study deals with very heavy clay soils in temperate and tropical regions. They are widespread in the chosen study area in eastern France. It is stated that these soils, locally known as Pelosols, have been little studied, that their genesis is complex and that, therefore, their place within the soil classification systems not well determined.

For this study the author has chosen three aspects: the formation of clay, the organic matter, and the role of iron in the formation of the clay-humus complex of three different soils: a brown acid soil (sol brun acide), a Vertisol and a Pelosol. Based on the data obtained, the author concludes that the Pelosol fills an intermediate position between the other two soils with regard to the chemical and clay mineralogical aspects mentioned.

It is also concluded that Pelosols could neither be classified as acid brown soils or Vertisols nor as hydromorphic soils. They seem to fit more properly the class of slightly developed soils (sols argileux peu évolués) or should be regarded as a special class, a point of view adopted by German pedologists.

Altogether, an interesting study of more than regional importance. It is, therefore, regrettable to see that the thesis does not include English and/or German summaries.

**International Soil Museum**  
**Utrecht, Netherlands**



**PROCEEDINGS SYMPOSIA CLASSIFICATION OF SOILS AND SEDIMENTARY ROCKS and MICROFABRICS OF SOIL AND SEDIMENTARY DEPOSITS.**  
**Centre for Resources Development, University of Guelph, Guelph, N1G 2W1, Canada, 1973. Can. \$ 10.— each as an introductory offer, future prices will be \$ 20.— each.**

Proceedings of two symposia organized by the Department of Land Resource Science, University of Guelph, Guelph, Ontario, Canada are now available.

**Classification of Soils and Sedimentary Rocks**, edited by R. Protz and I. P. Martini includes:

- Soil Development Processes by F. F. Riecken
- Basic Concepts used in Classifying Sedimentary Rocks by G. V. Middleton
- Present Basic Concepts used in Classifying Soils by G. D. Smith
- Developing Concepts and Diagnostic Criteria for Soil Classification by L. P. Wilding
- Some Aspects of Classification by J. C. Griffiths.

**Microfabrics of Soil and Sedimentary Deposits**, edited by R. Protz includes:  
— Applications of the latest Techniques of Microfabric Studies to Engineering Geology by J. E. Gillott

- Microfabric Characteristics as Applied to Soil Classification by W. D. Neddleton
- Micromorphological Features of Soils in Relation to Plant Growth by M. H. Miller and L. P. Wilding
- Some Aspects of Soil Fabric and Structure in Soil Mechanics by R. Yong
- Microfabrics and Soil History by R. Brewer.

**R. Protz**  
**Dept. of Land Resource Science**  
**University of Guelph**  
**Guelph, Canada**

**VERHEYE, W. Formation, Classification and Land evaluation of Soils in Mediterranean Areas (with special reference to the Southern Lebanon).**

**State Universtiy Ghent, 1973. Pp. 122, incl. Soil Map of South Lebanon 1 : 50,000. Price US \$ 6.—.**

This book is a very compact overall review on soils, soil survey and land evaluation of the Southern Lebanon. The area comprises the coastal plain, the plateau region and other uplands and a part of the mountain range. The soils concerned have been developed on various sediments, such as sandstones, marls and limestones. They are partly subject to erosion. Attention is given to 48 soil units accompanied by profile descriptions, analytical data, micromorphological features and the clay mineralogy.

These characteristics, as well as the soil forming factors, form the basic elements of soil evaluation for crops in xeric climates. The soil suitability is expressed in a formula using parameters on texture, carbonate and gypsum content, salinity status, sodium saturation, soil drainage conditions, soil depth, development of the epipedon, slope, and the weathering stage of the parent material.

Index figures based on the needs and tolerances of various crops cultivable in xeric climates on the soil types available give indications for suitability indices re the soil types present. The system is a modification of that developed in other regions e.g. by Riquier, Storie and others, in order to obtain a subjective evaluation system with additional data for the Mediterranean area. This publication may be used as a useful guide for other areas having a Mediterranean climate and similar physical environments.

**J. J. Reijnders**  
**Soils Institute**  
**Utrecht, Netherlands**

**WALSH, L. M. and BEATON, J. D., (Editors). Soil Testing and Plant Analysis, Revised Edition. Soil Science Society of America. Madison, Wisc., 1973. Pp. XVII and 491.**

This book is a revision of the first edition of Soil Testing and Plant Analysis which was a collection of papers resulting from several symposia held in the mid-1960's on soil testing. This revision summarizes current knowledge and experience on the use of soil and plant analysis as aids in appraising nutritional conditions and in predicting fertilizer needs.

Though the discussions presented are based on conditions and experiences in the United States of America, this book is valuable for workers in other countries too, not only for those concerned with soil and plant analysis but also in other fields of soil science, agronomy and related sciences.

**A. Muller**  
**Royal Tropical Institute**  
**Amsterdam, Netherlands**

#### **CATENA - A new Journal**

It has been announced that CATENA, an Interdisciplinary Journal of Geomorphology — Hydrology and Pedology, will soon be started.

According to the Guide for authors, CATENA publishes original papers and research reports, of supra-regional interest, covering topics of geomorphology, hydrology and pedology as well as adjoining disciplines in English, French and German. Also welcomed are critical comments on previously published papers.

All inquiries should be directed to:

**Editorial Office CATENA**  
**c/o Geographical Institute**  
**D 6300 Giessen**  
**Neues Schloss**  
**Fed. Rep. of Germany**

#### **LANDSLIDE - A new Journal**

The new journal entitled LANDSLIDE — The Slope Stability Review, will not only be of interest to engineering geologists, but also to soil engineers, geographers, land-use planners, etc. It is stated that one of the prime editorial goals of Landslide is to provide a forum for the interchange of ideas between various professions.

The journal contains also a bibliography of recent publications on slope stability, newspaper clippings on slope (in)stability events, announcements of meetings, etc.

The subscription price for 1 year (2 issues), including postage, is US \$ 7.50.

All inquiries should be directed to:

**Thomas Collins, Editor**  
**LANDSLIDE**  
**P.O. Box 1347**  
**Eureka, CA 95501, USA.**



**Prof. Dr. Eugenia Nickolaevna Ivanova †**

On 26 Januari 1973 Professor Dr. E. N. Ivanova, the oldest research worker of the Dokuchaev Soil Institute, Honoured Scientist of the Komi ASSR, and V. V. Dokuchaev-prize winner, passed away.

Soil Science lost one of the most outstanding scientists, a prominent authority in soil genesis and geography, organizer and participant in the fields of soil genesis, geography, classification and cartography in the USSR.

Eugenia Nickolaevna Ivanova was born in Petersburg in 1889. She graduated from the Institute of Geography founded by well-known scientists — L. S. Berg, V. I. Vernadsky, S. S. Neustruev, A. E. Fersman, Yu. M. Shokalsky

—, and started her research work at the Dokuchaev Soil Committee — the first in the USSR institution for soil investigation. Her first scientific adviser was Prof. S. S. Neustruev, one of the founders of pedology.

The scope of geographical investigations carried out by E. N. Ivanova is unique. She worked in the deserts of Kazakhstan and Turkmenia; in the steppes of Povolzhye and Precaspian Lowland; in the taiga regions of Karelia, the Urals, Russian Plain, Yakuti and Kamchatka; the tundras of the Kola Peninsula and Western Siberia. Actually, she has profoundly studied geography and genesis of all the principal soils occurring in the vast territory of the USSR.

Prof. E. N. Ivanova was the author of more than 200 papers of great theoretical and practical value devoted to various but always urgent problems of soil genesis and geography, viz. biological accumulation of salts in the dry steppe soils, theory of thermal complexity of the soil cover, conception about forms and manifestation of the solonetz-solonchak-forming process in various natural zones and genesis of acid, non-podzolized taiga soils.

E. N. Ivanova was one of the first investigators of soils in the extreme north of the USSR, author of the notions on the genesis and geography of the tundra zone soils. Her concepts on the role of the cryogenic processes in the tundra soil formation, the significance of the microrelief in the soil cover of tundra, the genesis and evolution of tundra microrelief and regularities of its geographical distribution, etc. are broadly shared by scientists.

For a long period of time, E. N. Ivanova headed the Department of Soil Genesis, Geography and Cartography of the Dokuchaev Soil Institute staffed by the leading scientists in the field of soil geography. Under her guidance and editorship review soil maps were compiled and work was in progress on the soil-geographical regionalization of the USSR and elaboration of classification, systematization and diagnosis of the USSR soils.

The soil map of the Arctic at a scale 1 : 10,000,000 which will appear in the "Atlas of the Arctic" being published in the USSR was the last undertaking of E. N. Ivanova completed 2 months before her death.

E. N. Ivanova was the founder of one of the best in the USSR soil-geographical schools. Any scientist could be proud of such a great number of disciples, many of whom have become leading scientists-pedologists of the USSR.

Eugenia Nickolaevna Ivanova was a personality of great soul. She was not only teacher and preceptress of her co-workers and colleagues, but also their responsive, kind and true friend and helpmate.

Prof. E. N. Ivanova was one of the most outstanding soil scientists, her works will remain in our science for ever, as well as her memory in the hearts of those people who had the privilege of knowing her.

All-Union Society of Soil Scientists.



### **Dr. Paul Appiagyei-Danka †**

Dr. Paul Appiagyei-Danka, Executive Secretary of the Grains Development Board in Ghana, died after a short illness in Kumasi, Ghana, on 11 June 1972.

Paul Appiagyei-Danka was born in 1932. In 1954 he went to West Germany where he studied at Stuttgart Agricultural High School and the Berlin Technical University, where he obtained the degree of Diplom-Landwirt and, in 1965, a Doctorate degree in Agricultural Science. After his return to Ghana he reorganized the teaching and research programme in Soil Science and Agricultural Chemistry of the University of Science and Technology and was appointed Senior Lecturer in 1968. In 1971 the Ghanaian Government invited him to become Executive Secretary of the Grains Development Board.

He was a distinguished member of several international academic societies and read papers at a number of local and international conferences.

He will be greatly missed.

### **Prof. Dr. G. Donald Sherman †**

We lost another friend and colleague. G. Donald Sherman, specialist in tropical soils, Emeritus Professor of Soil Science, former Associate Director of the Agricultural Experiment Station, University of Hawaii, died on 23 March 1973.

He was born in Ulen, Minn. on 4 June 1904. He received a B.S degree from the University of Minnesota in 1933, M. S. and Ph. D. from Michigan State University in 1937 and 1940.

Dr. Sherman served as assistant chemist with the University of Kentucky Experiment Station 1937 - '40, and with the U.S.D.A., 1941 - '42. From 1942 - '44 he was chemist and head of Dept. of Soils and Agricultural Chemistry, University of Hawaii. From 1944 - '56 he was senior soil scientist and head of the Dept. of Soil Science. From 1956 until his retirement in 1969 he was Associate Director of the Agricultural Experiment Station.

After retirement, Dr. Sherman served as Professor in the American University, Beirut, Lebanon. He held membership in a number of American and international societies, including SSSA, ISSS and the Tropical Soil Science Society.



### **Dr. Ernest Carr Childs' †**

Dr. Ernest Carr Childs, Reader in Soil Physics in the University of Cambridge and Honorary Director of the Agricultural Research Council Unit of Soil Physics, died on 24th May 1973 aged 65 after an illness lasting several months. His death is a great loss to all soil scientists, particularly those concerned with the physics of soil water on which he continued to work to the end in spite of failing health which he stood with patience.

Ernest Childs' training was in physics, and after graduating at King's College, London, and being awarded the Jelf medal for Natural Sciences, he spent a short time in industry with the Cambridge Instrument Company in London

before returning as demonstrator in the Wheatstone Laboratory at King's College, where he worked on the radio frequency properties of ionised air. This was followed by a period of research at the Cavendish Laboratory, Cambridge, on the diffraction of electrons in metal vapour.

His work on soils began in 1934 when he went to the University of Cambridge School of Agriculture to do work on the movement and retention of water in soils

with particular application to land drainage. The importance of his work to land reclamation was evident in the 1940's, and in order to ensure its continuity, the Unit of Soil Physics was established under his directorship in 1951. With its abundant supply of research publications on the physics of soil water and on the theory of land drainage, this soon became an institute of international reputation, in which many visiting scientists and research students were inspired by the vigour and clarity of Dr. Childs' thinking. We are indeed fortunate that in 1969 his book "An introduction to the physical basis of soil water phenomena" was published. This embodies his fundamental contributions to soil physics which over the last forty years have made him an authority on the subject of the physics of soil water and of soil-water management and a much sought after scientist for advisory work both in the United Kingdom and abroad.

His teaching in Cambridge was confined mainly to research students in recent years, and it was his overseas' visiting professorships in America and Egypt that gave him the opportunity to present courses of advanced lectures on the physics of soil water. In the United Kingdom he remained to most soil scientists a much respected but rather remote person. However, to all those who sought his advice, he always gave most generously his time and hospitality. He will be greatly missed, particularly by his closest colleagues.

**Agricultural Research Council  
Unit of Soil Physics**



**Morice Fieldes D.Sc., F.R.S.N.Z. †**

Dr. Morice Fieldes, Director of the New Zealand Soil Bureau, died suddenly at his home in Wellington on June 4. His passing is mourned by many colleagues and friends who will miss him for his outstanding scientific and human qualities.

Morice Fieldes was born in Nelson in 1914 and educated at Nelson College and Canterbury University College from which he graduated with honours in physical chemistry in 1935. He joined the Soil Bureau in 1948 to lead the Physical Chemistry Section and became Director in 1966.

His scientific work, recorded in more than 50 papers, has made a major contribution to changing New Zealand soil science from a largely interpretive study to one firmly based on physical and chemical measurements. He introduced many new techniques for clay and soil studies but his main achievements were in clay mineralogy, and his concepts and associated concepts of weathering have proved fundamental to the understanding of New Zealand soils. His papers on allophane have proved of particular interest to soil scientists in areas round the Pacific where there has been volcanic activity.

More recently he has turned his attention more to soil classification and to the application of research findings to land-use planning. In this he was making a major contribution to the future welfare of his country.

Dr Fieldes will be remembered for his scientific creativity and integrity, his farsightedness, his demand for high standards, his courage and dedication, and his humanity. His memory will be an inspiration to all those privileged to work with him.

**New Zealand Society  
of Soil Science**



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