

BULLETIN

OF THE INTERNATIONAL SOCIETY
OF SOIL SCIENCE



BULLETIN

DE L'ASSOCIATION INTERNATIONALE
DE LA SCIENCE DU SOL



MITTEILUNGEN

DER INTERNATIONALEN BODENKUNDLICHEN
GESELLSCHAFT



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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- Vice-President : I. P. Guerasimov, Geography Institute of the Academy of Sciences of the USSR, Staromometni 29, Moscow.
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- Dr L. A. Richards, 4455 Fifth Street, Riverside, Cal., U.S.A.
- Prof. Dr A. A. Rode, Dokuchaev Soil Institute, Pygevski per. 7, Moscow 17, USSR.
- Prof. Dr Emil Truog, University of Wisconsin, Madison, Wis. 53706, U.S.A.

Commissions/Commissions/Kommissionen:

I — SOIL PHYSICS.

Chairman: W. R. Gardner, Department of Soil and Water Science, University of Wisconsin, Madison, Wisc. 53706, U.S.A.

II — SOIL CHEMISTRY.

Chairman: H. Laudelout, Institut Agronomique, Héverlé, Belgium.

III — SOIL BIOLOGY.

Chairman: G. Fahreaus, Microbiologiska Institutionen, Uppsala 7, Sweden.

IV — SOIL FERTILITY AND PLANT NUTRITION.

Chairman: O. T. Rotini, Facoltà di Chimica Agraria dell' Università degli Studi, Via S. Michele degli Scalzi 2, Pisa, Italy.

V — SOIL GENESIS, CLASSIFICATION AND CARTOGRAPHY.

Chairman: R. Dudal, World Soil Resources Office, F.A.O., Via delle Terme Caracalla, Roma, Italy.

VI — SOIL TECHNOLOGY.

Chairman: T. J. Marshall, C.S.I.R.O., Division of Soils, Private Mail Bag 1, Glen Osmond, S.A., Australia.

VII — SOIL MINERALOGY.

Chairman: K. Norrish, C.S.I.R.O., Division of Soils, Private Mail Bag 1, Glen Osmond, S.A., Australia.

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No. 36

1970

NEWS OF THE COMMISSIONS

Joint Session of Commissions I and IV

Soil-Water Physics and Technology

Rehovot, Israel, August/September 1971

(Additional Information)

General Program

- Aug. 30 to Sept. 2 1971 — Registration. Formal Opening session in the evening.
- Aug. 29, 1971 — Working Sessions (Ladies activities).
- Sept. 3—4 1971 — Professional Tour.

The tour will combine a visit of the Israeli Water Resources Development Scheme, demonstrations of irrigation methods used in various areas, a view of the Agricultural Development of Israel, its various methods of land colonisation and reclamation, and finally a short recapitulation of the main Israeli Soil Types. (Sightseeing programs before and after the conference will be available for visitors interested in the Historical and Biblical aspects of the Holy Land. Details upon request.)

Paper Presentation

- Papers will be accepted in English, French or German. Intending authors should note that an abstract of about 200 words should reach the Organizing Committee not later than Aug. 1. 1970.
- The paper should not exceed 3000 words and should be submitted in triplicate to the organizing committee not later than Nov. 1. 1970.
- The manuscripts will be reviewed by an International body of reviewers. The proceedings will be sent to participants before the meeting in order to promote discussion of the papers.

Bulletins

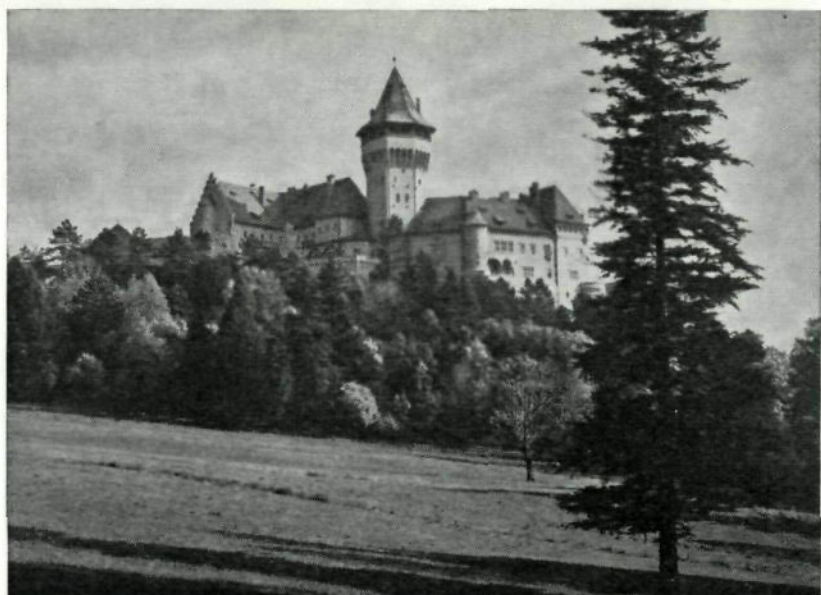
- Members of the ISSS who did not send a Notice of Intent but are interested in receiving circular letters and information bulletins about the meeting, should send their name and address to Dr. S. Gairon, Volcani Institute of Agricultural Research, P.O.B. 15, Rehovot, Israel.

Commission V

Symposium on the Age of Parent Materials and Soils

Amsterdam, Netherlands, August 1970

As communicated by special airmail letters I.S.S.S. organizes, conjointly with INQUA and in collaboration with UNESCO, the above meeting on paleopedology. Seven main lectures by invited speakers and 24 communications by other participants will be presented.



*The seat of the meeting at Smolenice.
House of the members of the Slovak Academy of Science.
How it looks in summer.*



*How it was in winter. Even 1 m of snow however could not thwart
international friendship and understanding.*

Joint meeting of Commissions V and VI

Pseudogleys and Gleys - Development and Use of Hydromorphic Soils Stuttgart-Hohenheim, W. Germany, September 1971

As announced in the special leaflet on I.S.S.S. Symposia details on the tours into Germany are now given.

Excursion programmes:

A: Stuttgart-Langenburg-Stuttgart, A 1: Sept. 6 + 7th, A 2: Sept. 12 + 13th 1971.

Topics: Site properties and amelioration of soils with impeded drainage and ground water soils derived from loess and clays.

Route: Stuttgart - loess hills in the Neckar basin - loess-cover on clays in the Kocher/Jagst plateau - Langenburg - clay-cuesta in the Hohenlohe plateau, hill country on clay layers in the Craillsheim area - Hohenstaufen - Clay-cuesta in the foot hill region of the Alb - Stuttgart.

Costs: Approx. DM 80.—.

B: Stuttgart-Lake Constance-Stuttgart, B 1: Sept. 6 + 7th, B 2: Sept. 12 + 13h 1971.

Topics: Influence upon soil genesis of impeded drainage, water moving laterally on slopes and ground water in areas with various geomorphical and climatic features.

Route: Stuttgart - Lake Constance - marl moraines in South Württemberg - clay-cuestas in the foothill region of the Alb - Rottweil - cuestas on sandstone and clays and sloping country on sandstone in the Black Forest - Terrace and river valley of the upper Rhine river - Karlsruhe - Stuttgart.

Costs: Approx. DM 100.—.

C 1: Hamburg-Munich (August 28th—September 4th, 1971), C 2: Munich-Hamburg (September 15th—22th, 1971).

Topics: Typical Soils of Germany and problems in using them.

Route: Hamburg - coastal areas and marshes along the North sea - Hamburg - bogs in Lower Saxonia - dunes, sandurs and Saale-moraines in the Lüneburger Heide area - Hannover - loess hill country in the Hildesheim and Calenberg Börde - Hannover - sandurs of the Münsterland terraces and river valley of the lower Rhine river - Bonn - penepline of the Rhein. Schiefergebirge - volcanic area in the Southern Eifel mountains - Terraces in the vineyards along the middle section of the Rhine river - Wiesbaden - loess hill country in the Mainz basin - Terraces along the upper Rhine river - granite mountains in the Odenwald - Würzburg - sandstone-clay/lime-stone cuestas in the Fränkische Alb - loess covered terraces in Southern Bavaria - Munich - Würm moraines north of the Alpes - limestone Alpes - Munich.

Costs: Approx. DM 400.—.

Other dates:

Conference:

September 8th—10th 1971, arrival and days at free disposal September 5th, 11th and 14th 1971.

Important note:

You are kindly asked to supplement your preliminary reservation (see Bulletin No 35) with informations sent to the Department of Soils, University of Hohenheim, 7000 Stuttgart - Hohenheim, W. Germany:

- To which of the 6 main topics listed in Bulletin No 35 you want to contribute a lecture.
- Which excursions (A 1 or 2, B 2 or 1, C 1 or 2) you intend to take part in. Please tell which you would prefer most and whether there are limitations with respect to time.

NOUVELLES DES COMMISSIONS

Session commune aux Commissions I et VI sur la physique et la technologie du complexe sol-eau

Rehovot, Israël, 29 août—4 septembre 1971

Programme général

- 29 août 1971 — Accueil. Session officielle d'ouverture dans la soirée
30 août—2 septembre 1971 — Session de travail (Activités pour les Dames)
3—4 septembre 1971 — Excursion technique

L'excursion combinera une visite des installations pour le Développement des Ressources israéliennes en eau avec démonstration sur les méthodes d'irrigation utilisées dans des sites variés, une vue d'ensemble sur le développement de l'agriculture en Israël, les différentes méthodes de colonisation et de restauration du pays et, enfin, un bref rappel des principaux types de sols israéliens (des visites de différentes curiosités, avant et après la conférence peuvent être organisées pour les personnes intéressées par l'aspect historique et biblique de la Terre Sainte. Des détails seront donnés sur simple demande).

Présentation de communications

- Seront acceptées les communications faites en anglais, en français ou en allemand. Les futurs auteurs noteront qu'un résumé d'environ 200 mots doit parvenir au Comité Organisateur avant le 1er août 1970.
- La communication ne doit pas dépasser 3000 mots et doit parvenir au Comité Organisateur en trois exemplaires avant le 1er novembre 1970.
- Les manuscrits seront revus par un groupe international d'examineurs. Les Comptes Rendus seront remis aux participants avant la réunion dans le but de favoriser des discussions sur les communications.

Bulletins

Les Membres de l'AISS qui n'ont pas envoyé de bulletin de participation mais qui désirent recevoir de la documentation et des informations concernant la conférence peuvent écrire en mentionnant leur adresse au **Dr. S. Gairon, Volcani Institute of Agricultural Research, P.O.B. 15, Rehovot, Israël.**

Reunion conjointe des Commissions V et VI

Pseudogleys et gleys — Genèse et utilisation des sols hydromorphes Stuttgart-Hohenheim, Allemagne de l'Ouest, 6—13 septembre 1971

En complément des renseignements parus dans le Bulletin no. 35 de l'AISS, les renseignements suivants sont donnés.

Programme d'excursions

A. Stuttgart-Langenburg-Stuttgart. A-1: 6 et 7 septembre, A-2: 12 et 13 sept. 1971.

Thème: propriétés locales et amélioration des sols à drainage imparfait et des sols de nappe phréatique dérivés de loess et d'argiles.

Trajet: *Stuttgart* - collines loessiques dans le bassin du Neckar - couverture loessique sur des argiles sur le plateau du Kocher/Jagst; *Langenburg* - cuesta argileuse sur le plateau Hohenlohe, région accidentée sur couches argileuses dans la région de Crailsheim; *Hohenstaufen* - cuesta argileuse dans la région du piémont d'Alb; Stuttgart.

Prix: approximativement 80 DM.

B. Stuttgart-Lac de Constance-Stuttgart. B-1: 6 et 7 septembre, B-2: 12 et 13 sept.

Thème: influence du drainage imparfait sur la genèse du sol, mouvements latéraux de l'eau sur les pentes et nappe phréatique dans des régions à caractéristiques géomorphologiques et climatiques variées.

Trajet: *Stuttgart-Lac de Constance* - moraines marneuses dans le Württemberg méridional - cuestas argileuses dans la région du piémont d'Alb; *Rottweil* - cuestas sur grès et argiles et relief accidenté sur grès dans la Forêt Noire - Terrasses et vallée de cours d'eau du Rhin supérieur, Karlsruhe-Stuttgart.

Prix: approximativement 100 DM.

C-1. Hambourg-Munich, 28 août—4 septembre 1971.

C-2. Munich-Hambourg, 15—22 septembre 1971.

Thème: *sols typiques d'Allemagne et problèmes concernant leur utilisation.*

Trajet: *Hambourg* - régions côtières et marais le long de la Mer du Nord; *Hambourg* - marais en Saxe inférieure - dunes, dépôt fluvioglaciaire et moraines anciennes dans la région de bruyères de Lüneburg; *Hanovre* - région accidentée loessique dans le Hildesheim et le Calenberg Börde; *Hanovre* - région de dépôts fluvioglaciaires dans le Münster - terrasses et vallée riveraine dans le Bas-Rhin; *Bonn* - pénéplaine du Rhin. Schiefergebirge-zone volcanique des montagnes de l'Eifel méridional - terrasses dans les vignobles le long de la partie moyenne du Rhin; *Wiesbaden* - région accidentée loessique dans le bassin du Main - terrasses le long du Rhin supérieur - montagnes granitiques dans le Odenwald; *Würzburg* - cuestas quartzo-argileuses et calcaires dans l'Alb franque - terrasses couvertes de loess en Bavière méridionale; *Munich* - moraines würmiennes dans le Nord des Alpes - Alpes calcaires; Munich.

Prix: approximativement 400 DM.

Autres dates

Conférence: 3—10 sept. 1971, arrivée et jours libres, 5, 11 et 14 sept. 1971.

Remarque importante

Nous vous demandons de bien vouloir compléter la première réservation (voir Bulletin No. 35) par des informations à envoyer au Département des Sols, Université de Hohenheim, 7000 Stuttgart-Hohenheim, Allemagne occidentale:

- a) concernant les six thèmes principaux repris dans le Bulletin No. 35 auxquels vous désirez contribuer,
- b) concernant les excursions (A-1, A-2, B-1, B-2, C-1 ou C-2) auxquelles vous avez l'intention d'assister. Signalez celle que vous préférez car il y a des restrictions en fonction du temps.

NEUES DER KOMMISSIONEN

Gemeinschaftstagung der Kommissionen I und IV über die physikalischen und technologischen Verhältnisse des Bodenwassers Rehovot, Israel, 29. August—4. September 1971

Überblick über das Programm

29. August 1971: Anmeldung. Offizielle Eröffnung der Tagung am Abend.
30. August—2 September 1971: Arbeitstagungen (Damenprogramm).
3.—4. September 1971: Bodenkundliche Exkursion.

Die Exkursion wird umfassen einen Besuch des „Israeli Water Resources Development Scheme“, Demonstrationen der in verschiedenen Gebieten angewandten Bewässerungsmethoden, einen Überblick über die landwirtschaftliche Entwicklung Israels, der verschiedenen Methoden für die Inkulturnahme und Nutzung und zum Schluß eine kurze Wiederholung der bedeutenden Bodentypen Israels. Ein Programm der Sehenswürdigkeiten ist vor und nach der Konferenz für die Besucher vorgesehen, die an dem historischen und biblischen Geschehen des Heiligen Landes interessiert sind. Einzelheiten werden auf Anfrage gegeben.

Vorlage der Vorträge

Vorträge werden in Englisch, Französisch oder Deutsch angenommen. Die Verfasser der Vorträge sollten vorsehen, einen Auszug von etwa 200 Worten dem Organisations-Komitee bis zum 1.8.70 einzureichen.

Der Vortrag soll 3000 Worte nicht überschreiten und soll dem Organisations-Komitee bis zum 1.11.70 in dreifacher Ausfertigung zugesandt werden.

Die Manuskripte werden von einer internationalen Prüfungsgruppe durchgesehen. Das Ergebnis wird den Teilnehmern vor der Tagung mitgeteilt, um die Diskussion über die Vorträge zu erleichtern.

Tagungsberichte

Mitglieder der ISSS, die nicht beabsichtigen an der Tagung teilzunehmen, aber an den Rundschreiben und den Tagungsberichten interessiert sind, werden gebeten, ihren Namen und Anschrift an Dr. S. Gairon, Volcani Institute of Agricultural Research, P.O.B. 15, Rehovot, Israel, zu senden.

Gemeinsame Konferenz der Kommissionen V und VI Pseudogleys und Gleys - Entstehung und Nutzung hydromorpher Böden Stuttgart-Hohenheim, W. Deutschland, September 1971

Wie angegeben in der speziellen Ankündigung bezüglich der I.B.G. Symposia werden weitere Einzelheiten über die Exkursionen in West Deutschland jetzt mitgeteilt.

Exkursionsprogramm:

A: Stuttgart-Langenburg-Stuttgart (A 1: 6. + 7.9., A 2: 12. + 13.9.1971).

Thema: Standortseigenschaften und Meliorationen von Stau- und Grundwasserböden aus Löss und Tongesteinen.

Route: Stuttgart - Lösshügel des Neckarbeckens - lössbedeckte Tonflächen der Kocher/Jagst-Ebenen - Langenburg - Tonschichtflächen der Hohenloher Ebene - Tonhügel der Crailsheimer Bucht - Hohenstaufen - Tonschichtstufen des Albvorlandes - Stuttgart.

Kosten: etwa DM 80.—.

B: Stuttgart-Bodensee-Stuttgart (B 1: 6. + 7.9., B 2: 12. + 13.9.1971).

Thema: Stau-, Hang- und Grundwassereinfluss in Bodengesellschaften verschiedener geomorpher Einheiten und Klimastufen.

Route: Stuttgart - Bodensee - Mergelmoränen in Oberschwaben - Tonschichtstufen des Albvorlandes - Rottweil - Sandstein/Tongestein-Schichtflächen- und Sandstein-Hanglandschaften des Schwarzwaldes - Terrasse und Aue des Oberrheins - Karlsruhe - Stuttgart.

Kosten: etwa DM 100.—.

C 1: Hamburg-München (28.8.—4.9.1971), C 2: München-Hamburg (15.—22.9.1971).

Thema: Typische Bodengesellschaften Deutschlands und deren Nutzungsprobleme.

Route: Hamburg - Watt und Marschen der Nordseeküste - Hamburg - Moore Niedersachsens - Dünen, Sander und Altmoränen der Lüneburger Heide - Hannover - Lösshügel der Hildesheimer und der Calenberger Börde - Hannover - Sanderlandschaft des Münsterlandes - Terrassen und Aue des Niederrheines - Bonn - Peneplaine des Rhein. Schiefergebirges - Vulkanlandschaft der Südeifel - Weinbergterrassen des Mittelrheins - Wiesbaden - Lösshügel des Mainzer Beckens - Terrassen des Oberrheins - Granitberge des Odenwaldes - Würzburg - Sandstein/Tongestein/Kalkstein-Schichtstufen der Fränkischen Alb - lössbedeckte Terrassen Oberbayerns - München - Jungmoränen des Alpenvorlandes - Kalkalpen - München.

Kosten: etwa DM 400.—.

Weitere Termine:

Vortragstagung:

8.—10.9.1971, Anreise - bzw. Ruhetag: 5., 11., 14.9.1971.

Wichtiger Hinweis:

Es wird gebeten, die vorläufigen Anmeldungen (s. Bulletin No 35) durch Mitteilung an die Abteilung Bodenkunde der Universität Hohenheim, 7000 Stuttgart - Hohenheim zu ergänzen um:

- a. Angabe der Themengruppen (1—6), zu der ein Vortrag eingereicht wird.
- b. Interesse an Exkursionen (A 1 oder 2, B 2 oder 1, C 1 oder 2) mit der Angabe von Präferenzen und Limitierungen.

COMMISSION V

Sub-Commission on Salt Affected Soils

The Working Group on the Map of Salt Affected Soils of Europe met in Smolenice (Slovakia) as from 22—26 February 1970. Dr. J. Hrasko, member of the Czechoslovak Academy of Agriculture and Director of the Institute of Soil Science and Agrochemistry, Bratislava, was host to the meeting, which assembled in one of the many beautiful castles of Slovakia. Twenty-five representatives of the European countries, viz. Czechoslovakia (host country), Bulgaria, France, Rumania, Spain, USSR and Yugoslavia participated in the meeting. The U.N. agencies FAO and UNESCO did show active interest through the presence of Dr. R. Dudal (F.A.O.) and Professor G. Aubert speaking on behalf of UNESCO, whereas the S.G. represented ISSS.

The main topic of discussion was the first draft of the Map of S.A.S. of Europe as prepared by Professor Szabolcs, Chairman of the Sub-Commission and his collaborators, with the assistance of the regional representatives. The results of the deliberations are reflected in the following resolutions.

1. The participants of the Meeting of the Working Group of the Subcommission on Salt Affected Soils of the ISSS express their thanks to the Slovak Academy of Agricultural Sciences and to Academician J. Hrasko for their hospitality which made it possible to hold his Meeting in Czechoslovakia.
2. The Salt Affected Soils Map of Europe as presented to the Meeting is accepted as the map to be published with the understanding that acid saline soils will be indicated. Additions to be prepared by the representative of the USSR and any other small alterations which might be suggested by members of the Working Group will be included if they are delivered not later than the 31st of March to the address of Dr. Szabolcs, Budapest, II. Herman Otto ut 15.
3. The explanatory text will be drafted by Dr. Szabolcs. Copies will be sent to the participants for criticism and comments. In this report special attention will be paid to the definition of the mapping units and of "potential salinity and alkalinity". Information on the methodology of research will be given. More detailed information and, if possible, large scale maps of small areas will be included.
This material will be supplied by Hungary, Rumania, Spain, and Yugoslavia and delivered not later than the 1st of July 1970 to the address of Dr. Szabolcs. It will consist if possible:
 - a. A national map of a scale of not less than 1 : 1,000,000.
 - b. A regional map scale 1 : 100,000 to show the correlation between landscape morphology and landscape hydrology and salinity and/or alkalinity.
 - c. A large scale map of 1 : 25,000 or 1 : 50,000 as a basis for a practical example of the utilization of soils with actual or potential salinity and/or alkalinity. This map should show as much as possible details.
4. It is the consensus of the Meeting that the text should consist of at least 50 printed pages in quarto.
5. The technical aspects of printing the 1 : 5,000,000 map, the text with additional large scale maps, will be discussed with the appropriate authorities of UNESCO.

After the closing session of the meeting the Working Group of the Sub-Commission on S.A.S. on the Coordinated Field Experiment Program of the Reclamation of European Solonetz Soils then assembled to discuss the problems related to the implementation of this project. Dr. Sandu, Chairman of the Working Group, expressed his appreciation that F.A.O. had decided to send such a highly qualified expert as Dr. Dudal to assist in the meeting. Thanks to his active participation in the discussions a clear picture evolved with regard to the steps to be taken by the representative of the participating countries in order that further support of F.A.O. in the project might be most successfully solicited.

The weather conditions may have been rather adverse, the spirit of international cooperation made itself so warmly felt, that the closing dinner and reception graciously offered by his Excellency the Minister of Agriculture of Slovakia, was characterized by a strong feeling of harmony and understanding between the participants.

NEWS OF THE NATIONAL SOCIETIES

NOUVELLES DES ASSOCIATIONS NATIONALES

NEUES DER GESELLSCHAFTEN DER EINZELNEN LÄNDERN

Asociación Argentina de la Ciencia del Suelo

The Argentine Soil Science Society scheduled the following activity programme for 1970.

1. April Seminar on soil classification for conservators.
2. May Meeting on a national system of soil classification, cartography and soil evaluation.
3. June Symposium on clays.
4. July Colloquium on enzymatic activity in the soil.
5. August Discussion on soil fertility investigations.
6. October Symposium on complexing agencies and chelates.

For numbers 1 to 5 apply for further information to respectively: Ing. Agr. Antonio J. Prego, Ing. Agr. Ricardo Lores, Dr. Pieter Arens, Dra. Mérida Giambiagi and Ing. Agr. Marino Zaffanella, all AACs, Cervino 3101, Buenos Aires.

The October Symposium will be held in the Universidad Nacional del Sur, Bahia Blanca. Information: Dr. Ramon Rosell, Rondeau 29, Bahia Blanca.

Bulgarian Society of Soil Science

The First National Congress of Soil Science was held in Sofia, from 23rd to 25th September 1969. Before the opening of the Congress, a seven days' study tour around the country was organized, during which the participants became acquainted with the main soil types of Bulgaria as well as with some fertilizer and field experiments carried out. A vast majority of Bulgarian soil scientists did take part in the Congress together with 80 soil scientists from 18 European countries and the U.S.A. 85 papers were read at the meetings of the three Sections, whereas 7 were presented at the Plenary Sessions. Various problems of soil science in Bulgaria regarding fertilizer application, erosion control, soils with unfavourable properties, soil forming processes, etc. were discussed. A new Board of the Bulgarian Soil Science Society was elected, viz.

- President : Dr. I. Garbouchev, N. Poushkarov Institute of Soil Science, Sofia.
Vice-Presidents: Corr-Member Prof. V. Koinov, Higher Institute of Agronomy, Sofia.
Prof. K. Enikov, Academy of Agricultural Sciences, Sofia.
Secretary : Dr. L. Raikov, N. Poushkarov Institute of Soil Science, Sofia.
Members : Prof. P. Boyanov, Higher Institute of Constructive Engineering, Sofia.
Prof. G. Gyurov, V. Kolarov Higher Institute of Agronomy, Plovdiv.
Dr. Z. Naumov, Institute of Forestry, Sofia.

Indian Society of Soil Science

The following were elected as office bearers of the Indian Society of Soil Science for a period of two years (1970 & 1971):

- President: Dr. J. S. Kanwar
Vice-Presidents: Dr. N. P. Datta
Dr. C. Krishnamurthy
Mr. S. C. Mandal
Secretary: Dr. T. D. Biswas
Treasurer: Dr. A. S. Gowaikar
Jt. Secretary: Dr. A. B. Ghosh
Asstt. Secretary: Dr. S. P. Gawande

Österreichische Bodenkundliche Gesellschaft

The Austrian Society of Soil Science elected on January 21, 1970, the following members of the Board of the Society:

Präsident:

Univ.-Prof. Dr. Dipl. Ing. Herbert FRANZ,
Vorstand des Institutes für Bodenforschung,
Hochschule für Bodenkultur
Wohnanschrift: 1180 Wien, Haitzingerstr. 29

Vizepräsident:

Dr. Dipl. Ing. Herwig SCHILLER,
Direktor der Ldw. chem. Bundesversuchsanstalt Linz
Wohnanschrift: 4020 Linz, Linke Brückenstr. 50

Schriftführer:

Dr. Dipl. Ing. Walter KILIAN,
Forstliche Bundesversuchsanstalt Wien,
Wohnanschrift: 2500 Baden, Grillparzerstr. 4

Kassier:

Dipl. Ing. Karl FISCHER,
Fin. Land. Dion Wien (Bodenschätzung),
Wohnanschrift: 1200 Wien, Leystraße 20a/7

Weitere Vorstandsmitglieder:

Doz. Dr. Dipl. Ing. Franz BLÜMEL,
Direktor, Bundesversuchsinstitut für Kulturtechnik u. techn. Bodenkunde,
Wohnanschrift: 3252 Petzenkirchen, Ybbsstr. 18

Univ.-Prof. Dr. Julius FINK,
Geographisches Institut der Universität Wien,
Wohnanschrift: 1090 Wien, Alserbachstr. 11

Min. Rat Dipl. Ing. Anton KRABICHLER,
Bundesanstalt f. Bodenkartierung und Bodenwirtschaft,
Wohnanschrift: 1130 Wien, Hietz. Hauptstr. 126a

Doz. Dr. Dipl. Ing. Hubert MAYR,
Österreichische Stickstoffwerke,
Wohnanschrift: 4060 Leonding, Ortmayrstr. 22

Min. Rat Dipl. Ing. Helmut SCHLEIFER,
Bundesministerium für Land- und Forstwirtschaft,
Wohnanschrift: 1130 Wien, Fichtnergasse 2

Dr. Dipl. Ing. Karl SCHOBER, Pflanzenbaudirektor
NÖ. Landeslandwirtschaftskammer,
Wohnanschrift: 1130 Wien, Stadlergasse 25

Dipl. Ing. Hans SCHÜLLER,
Landwirtschaftl. chem. Bundesversuchsanstalt Wien,
Wohnanschrift: 1190 Wien, Hofzeile 10-12/4

Dr. Dipl. Ing. Franz SOLAR,
Hochschule für Bodenkultur,
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Ob. Fin. Rat Dipl. Ing. Adolf STECKER,
Bundesministerium für Finanzen,
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MISCELLANEOUS NEWS
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Symposium on Micronutrients in Agriculture

A symposium on the subject of "Micronutrients in Agriculture", to be co-sponsored by the Tennessee Valley Authority and the Soil Science Society of America, is currently being planned for April 20—22, 1971, at the National Fertilizer Development Center of TVA in Muscle Shoals, Alabama. Editorial and program committee chairman for the symposium is Dr. J. J. Mortved of the Soils and Fertilizer Research Branch of the TVA. Other committee members are Dr. P. M. Giordano, also of TVA; Dr. W. L. Lindsay of Colorado State University, and Dr. J. F. Hodgson of the USDA Plant, Soil, and Nutrition Laboratory.

The purpose of this 2½-day program will be to present a current treatise on the behavior of micronutrients in soils and fertilizers, and on their relationships to plant, animal, and human nutrition. General topics to be covered include the chemistry of micronutrients in soils, concepts of micronutrient uptake and function in plants, diagnosis and correction of micronutrient deficiencies, micronutrient fertilizer technology, and trace elements in animal and human nutrition. The proceedings of the symposium will be published in a hard cover book by the Soil Science Society of America.

The audience for the program is expected to include agronomists, soil scientists, geochemists, plant physiologists, and animal and human nutritionists from both the U.S. and abroad, as well as representatives of the fertilizer industry, delegates from developing countries, and a number of college professors and students.

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Working Group on Soil Micromorphology

In the communication in Bulletin No. 35, page 16, the name of Dr. E. Yarilova, USSR, as a member of the Working Group on Soil Micromorphology, has regretfully been omitted.

F. A. van Baren

DARAB, K. AND FERENCZ, K. *Öntözött Területek Talajkérdépezése (Soil Mapping and Control of Irrigated Areas)*. Országos Mezőgazdasági Minőségvizsgáló Intézet, Budapest, 1969, pp. 215, tables, maps, litt., English summary.

In this publication the principles and methods of soil mapping in connection with irrigation as carried out in Hungary are explained. Attention is given to the importance of soil genesis as it is of great influence on soil properties which in their turn directly or indirectly effect the water regime and irrigation potential of soils. Physical and chemical characteristics which have to be considered are discussed together with the analytical methods whereas criteria are presented for soil classification on the basis of soil and water properties, water requirement, etc.

Results of field studies and laboratory data are used for the construction of soil maps with cartograms which indicate the various important features. In this way the volume presents a fine example of the application of different branches of soil science to practical purposes.

It is to be appreciated that the authors have added rather elaborate summaries in Russian and English. By giving also translations of the headings of tables, figures and legends of the maps and cartograms this important publication has become accessible to a wider public.

A. Muller

Royal Tropical Institute, Amsterdam

PRETTENHOFFER, I. *Hazai szikesek javítása és hasznosítása. Tiszántúli szikesek (Amelioration and utilization of salt-affected soils in Hungary. Solonetz soils in the region east of the river Tisza)*. Akadémiai Kiadó, Budapest 1969, pp. 381, 144 tables, 126 photos and drawings.

The book deals with the results of the author's research work for the amelioration and utilization of solonetz soils in the region east of the river Tisza during the last 25 years. It is divided into four parts:

- I. The most important properties, classification, grouping, extent and occurrence of salt-affected soils in Hungary.
- II. Methods of amelioration of carbonateless solonetz soils east of the river Tisza and results.
- III. The effect of irrigation, growing of rice and fishfarming on carbonateless solonetz soils east of the river Tisza.
- IV. The amelioration and utilization of grass lands on carbonateless solonetz soils.

An extended English summary and lists with translations of tables and figures are available thus making the essence of the book understandable to foreign specialists. The volume is another proof of the high standard of research in the field of saline soils in Hungary.

THE DEMAND FOR AGRICULTURAL AND CATTLE PRODUCTS

A study carried out by Rafael Bermejo, Juan A. Doncel Amor, Carlos Sanchez Reyes, Luis Santonja and others (Madrid, Publicaciones del Fondo para la Investigacion Economica y Social de la Confederacion Espanola de Cajas de Ahorros, 1969), 1159 pages.

One of the most serious problems facing Spanish agriculture is the preparation of statistics, studies and programs on a scientific basis, essential in order to define the causes and motivations of our agrarian infrastructure. The publication of this study opens up unsuspected fields in regard to the programming and planning of same.

A great part of the confusion concerning the agrarian problems is due to the lack of price stability. The effects of transfer and of the King Law are fully applicable to our products. The former boosts the costs of the product artificially through handling by middle-men, the latter proclaims that an increase in production is followed by a rise in price for a double cause: one structural (insufficient markets) and one economic (an increase in production produces a lowering of yield to the producer).

The fact that the demand for agrarian products is ruled "from" the market and not "by" the market in its two components, lends a certain urgency to the study of the problem. Thus, on reading the study, one has the feeling that its technical part, its preparation and documentation, is unsurpassable, but it nevertheless lacks a full explanation of the consequences of commercialization, one of the most serious problems to be resolved.

It is evident that in an economic and demographic dynamic like the Spanish, the variations of the structure of consumption have a decisive influence in the programming of an agrarian policy, but even more so is the prior knowledge — with a certain margin of reability — of the essential primary factors for a coherent regulation of markets and, among them, the cornerstone is represented by the demand for agricultural and cattle products.

As the book expounds in its objectives, "the knowledge of the foreseeable tendencies of demand is a starting point for the fixing of an agrarian policy with an eye to the future". This knowledge is indeed essential.

This book will undoubtedly prove to be, with its clarification, by its methodology, by the sources of information utilised, and the interesting application of mathematic models expounded in its preparation, of great scientific value, thus accrediting it as a basic study.

There is no doubt that this work is going to be particularly interesting for the study of Spanish agriculture, looking to the future, as likewise an essential element of reference for a programming and orientation, given its abundant and interesting documentation, graphs and annexes which are data and sources of information which analyse the reality and provisions of the Spanish agricultural and cattle products.

Documentation Service CECA

BODENKUNDE. Lehrbuch für Ingenieurschulen. Von Prof. Dr. W. Baden, Dr. H. Kuntze, Dr. J. Niemann, Dr. G. Schwerdtfeger and Dr. F. J. Vollmer. pp. 430, 144 illustrations, 8 colour drawings of soil profiles. Verlag Eugen Ulmer, 7 Stuttgart 1, Postfach 1302. Price DM 38.—.

Soil science is one of the basic disciplines for agriculture, forestry, horticulture as well as a fundamental factor in the implementation of soil amelioration and plant production, in landscape formation and planning. These principles were the leading motives for the five authors when writing the new textbook. This is reflected in the six parts that make up the volume. Part I presents the fundamental geological aspects; II deals with the soil as a living physico-chemical system; III records soil development and (German) soil systematics; IV reviews soil geography; V contains a discussion on applied soil science, whereas in the final chapter VI landscape conservation in relation to agriculture, sociology and recreation is discussed. Numerous tables, figures and 8 coloured paintings of profiles (for all practical purposes more or less exact replica of the pictures in Mückenhausen's Systematics of the Soils of Germany) illustrate the well-composed text. For the reasonable price of DM 38.— a volume that combines an evaluation of scientific fundamentals with practical aspects and, as such, is a valuable addition to the ever growing number of textbooks on soil science. One has, of course, to be familiar with the German language.

PHYSIOLOGICAL ASPECTS OF CROP YIELD. Editors J. D. Eastin, F. A. Haskins, C. Y. Sullivan and C. H. M. van Bavel. American Society of Agronomy; Crop Science Society of America, 677 South Segoe Road, Madison, Wisconsin 53711. pp. 416. Ill.: 40 tables; 120 fig. Price: (for prepaid orders) \$10.— (\$8.— for members of ASA, CSSA, SSSA). Add 50 c per book for orders outside USA and Canada.

ASA, now conjointly with CSSA, presents with this volume an other valuable contribution to soil and crops science. It is the outgrowth of an international symposium on the physiological aspects of crop yield, held at Lincoln, Nebraska, in 1969. Specialists from many parts of the world attended the conference. The volume contains papers presented by invited speakers and reviews of contributed papers by discussion leaders. Of the subjects dealt with a few may be quoted: Engineering for higher yields (Y. Ishizuka); Productivity and the morphology of crop stands: patterns with leaves (R. S. Loomis and W. A. Williams); Physiological

significance of internal water relations to crop yield (R. O. Slatyer); Light interception and radiative exchange in crop stands (J. L. Monteith); Interrelationships among photosynthesis, respiration, and movement of carbon in developing crops (V. Stoy); Physiological responses to nitrogen in plants (Murata, Y.); Plant morphology and stand geometry in relation to nitrogen (R. F. Chandler, Jr.), and Cultural manipulation for higher yields (W. G. Duncan).

TERRAIN CLASSIFICATION AND DATA STORAGE - LANDSYSTEMS OF UGANDA. C. D. Ollier, C. J. Lawrance, P. H. T. Beckett, R. Webster. MEXE Report No. 959. 1969. II + 229 pages, 1 map. 40 x 54 cm.

The readers attention is immediately drawn to the large amount of outstanding airphoto stereo-pairs and triplets. The aim of the book is to provide 1° a division of Uganda into natural units as a base for landuse planning and 2° a framework for store of information on the resources of the country.

The authors distinguish 90 landsystems in Uganda by careful analysis of aerial photos, combined with data from previous fieldexperiences. Each landsystem is represented by one or more stereo-pairs, a blockdiagram showing position of landfacets, representative section(s), and groundphotographs, complemented with description of the different landfacets within each system, and data on climate, rock, landscape, soil, vegetation, altitude and relief.

The occurrence of the different landsystems in the country has been given in a separate coloured map, scale 1 : 1,000,000.

Although unfortunately no fieldchecks could be carried out, we consider the book as a valuable contribution to landclassification. It sets an example for inventarisation of data from aerial photos and other sources, and may be considered as a base for further investigations on subjects like geomorphology, pedology, geology, vegetation, ecology, agronomy, hydrology, etc.

It is a pity that human influences have not been mentioned and that ground-photographs of quite a number of landsystems could not be presented.

The presentation of data and photos is conveniently arranged and very well executed. Being an excellent example of how to start a scientific (or commercial) project in the less known parts of the world, the book deserves a widespread circulation.

J. A. K. BOERMA

SOILS OF THE TUGELA BASIN. A study of subtropical Africa. J. J. van der Eyk, C. N. Macvicar, J. M. de Villiers. Natal town and regional planning reports Vol. 15. 263 p. fig. pict. appendix with soil data. Town and Reg. Plan. Comm. Natal 1969. Price: Rand 9.50.

In this very nicely edited book the soils of the Tugela basin are clearly presented. The natural features are, successively, displayed in a logical way, followed by a discussion on their classification, its principles and background. The major soil profiles are shown in 29 coloured plates, while large photographs of the various landscape types and vegetation illustrate the volume. The data presented lead to the ultimate goal: the soil map, which is constructed with due consideration of the land capability and suitability aspects.

As the classification is strongly related to the landscape the two-catagory system is divided into a higher category of forms and a lower of series. The use of local names both for forms and series emphasizes the local importance of this planning report. Although this does not detract from its value as a contribution to soil geography, an endeavour to "internationalize" the classification system would have been a material help to the interested reader.

The forms are founded on distinct, defined criteria, strongly related to those of the 7th Approximation, though, unfortunately, the properties of the soils obliged (?) to create new names and limits for diagnostic horizons. The differentiation of series within the forms is mainly based on textural variation and, secondary, on base status and calcareousness. The system is crystallized in an eliminating key to the various soil forms. In an appendix short descriptions and analytical data of the 124 representative profiles are given.

J. J. REYNDERS

THE SOIL ECOSYSTEM; Sheals, J. G. (editor), 1969; X + 247 pp.; Agent for public sales: E. W. Classey, LTD. 353 Hanworth Road, Hampton, MIDDX, Great Britain.

The papers published in this book were presented at a symposium arranged by the "Systematics Association" and gathered in Publication No. 8.

Three main subjects are dealt with: Part I The Environment (pp. 1—66); Part II The Organisms (pp. 67—188); Part III Communities and Interactions (pp. 189—247).

The majority of the papers in the first two sections are concerned with classificatory problems and techniques, or with problems of comparative morphology (Part I concerning the soil; Part II concerning the soil organisms). The third section deals with wider ecological topics in the soil.

Part I starts with a description of the Soil Environment followed by four papers on classification: Problems of Soil Classification; The Basis of Numerical Methods of Classification; The Numerical Approach to Soil Systematics (in this paper it is suggested that computer storage of soil data will be useful for soil surveys and that numerical methods will then be used along with traditional ones for sorting, classifying and for choosing properties to construct keys) and The Classification of Humus Types in Relation to Soil Ecosystems. A last paper in Part I (The Agronomic Significance of Soil Mapping Units) stresses that soil classification for soil survey purposes must be based on properties that directly or indirectly, have land-use significance.

Part II consists of the nine following papers: Some Systematic Requirements in Soil Biology; The Identification of Soil Bacteria; Numerical Taxonomy of some Heterotrophic Bacteria Isolated from a Pine Forest Soil; A Practical Approach to the Taxonomy of Actinomycetes Isolated from Soil; Some Problems in the Systematics of Soil Nematodes; A Numerical Classification of Megascolecoid Earthworms; Some Basic Principles Underlying the Classification of Cryptostigmatid Mites; Preliminary Stereoscan Studies of the Genus *Onychiurus* Gervais (Collembola, Onychiuridae).

Part III contains six papers dealing with: The Systematic Study of Soil Ecosystems; Interactions Between Soil Micro-organisms and Plants; Age-Structure of Millipede Populations in Relation to Activity and Dispersion; A Study of Millipedes in a Grassland Community using Dieldrin as a Tool for Ecological Research; Life-Histories of some British Pseudoscorpions Inhabiting Leaf Litter; The Influence of Agricultural Practice on Soil Micro-Arthropod Populations.

Each paper is followed by a discussion while each Part is concluded with a General Discussion.

All in all an up to date review of the various aspects of the soil ecosystem.

L. BAL

TECHNICAL BULLETIN 15 — NITROGEN AND SOIL ORGANIC MATTER, 178 pages and illustrations publ. by H.M. Stationary Office, Atlantic House, London EC1, ref. SBN 11 240915. Price 40 sh.

This bulletin is a record of papers presented and of the discussion which followed, at a two-day conference held in October 1964 to consider the relationships between nitrogen and the organic matter in soil and to evaluate techniques for the estimation of the release of soil nitrogen for plant growths. The conference was organized by the Soil Scientists of the National Agricultural Advisory Service and attended by scientists from universities, research stations, and the fertilizer industry as well as from the N.A.A.S.

The papers brought together the most recent information on the subject including the metabolism of nitrogen in plant nutrition; processes affecting nitrogen in the soil; nitrogen releasing properties of various types of organic matter; prediction of nitrogen requirements of arable crops in mainly arable systems and following leys; as well as the determination of nitrogen requirements of crops by analysis. The use of nitrogen for grassland, fruit and glasshouse crops and the evaluation of fertilizers and bulky organic manures as sources of nitrogen were also discussed.

Syndicates were formed to deal in greater detail with laboratory methods and

prediction methods of assessing nitrogen reserves in the soil and to recommend further lines of investigational work; the reports of the syndicates are included in the bulletin.

The publication contains much information which will be of great value to research workers and advisers throughout the world who are concerned with nitrogen in the soil and for plant growth.

The text is supported with many graphs and useful tables.

NECROLOGY — NECROLOGIE — NEKROLOGIE

Prof. Dr. Robert Ballenegger †

(1882—1969)



On November 13, 1969 passed away the Great Old Man of the sciences of soil and agricultural chemistry in Hungary, Dr. R. Ballenegger, foundation member and for several decades office-bearer in the International Society of Soil Science.

His career coincided with the development and consolidation of soil science as an independent branch of learning, with the up-to-date and comprehensive realization of soil mapping, amelioration, fertilization and irrigation, and at the same time with the ISSS becoming a world organization.

In his scientific career we can distinguish three periods. Between 1910 and 1922 he took part in preparing the climatic soil map of Hungary both by soil surveying and directing the physical and chemical analyses of soil samples. From 1922 to 1949 he was working in higher education as the Head of the Chemistry and Soil Science Department at the College for Horticulture and Viticulture and as lecturer in agrogeology at the University of Sciences, Budapest.

He had the great faculty of treating the results of recent researches with clarity and precision, of making them easily intelligible, always discussing in full detail the problems emerging in practice; so his lectures, his scientific and educational works were valuable sources of knowledge not only for the students but for the educated general public, too. Dating from this period, his research work concerning the soil and nutrient requirements of orchards are worth mentioning. He took a post of responsibility in the vocational guidance of the country-wide soil amelioration work and of the preparation of detailed soil maps.

After his official retirement in 1949 he did not cease working with undiminished mental energy until his death. As the editor of the Method Books of Soil Analyses — the 3rd, revised and enlarged edition of which appeared in 1962 —, compiling the history of soil research in Hungary (published in 1963), further in cooperation with a special committee, elaborating the classification and nomenclature of Hungarian soils, Dr. Ballenegger summarized his scientific experience. Besides, he displayed valuable activity in the editorial board of the journal "Agrokémia és Talajtan" and as the Honorary Chairman to the Hungarian Society of Soil Science.

Since the Second International Conference on Agrogeology (Stockholm, 1911), Dr. Ballenegger took a share in promoting cooperation between soil scientists of all over the world acting for many years as leading member in the Commissions of Soil Physics, Chemistry, Cartography and Alkali Soils. From 1930 to 1941 it was he who represented Hungary in the Committee of the ISSS. As the Vice-Chairman of the Chemistry Commission, he took significant part in organizing the Budapest Conference in 1929. Also, he was the head of the Hungarian delegation to the Sixth Congress of the ISSS, held in Paris, 1956.

In the person of Dr. R. Ballenegger we have lost a many-sided expert versed in numerous branches of natural sciences who was equally prominent as research worker, tutor and specialist. His comprehensive knowledge, tactful and modest personality made him competent to promote cooperation between experts both in his country and abroad. His methodical character and working capacity are reflected in his articles — more than 200 in number — a good many books and passages in books written in the course of nearly 60 years. They are of permanent value to those working in the fields of soil science and agricultural chemistry.

Hungarian Society of Soil Science
Budapest

Prof. Dr. E. C. Julius Mohr †

(1873—1970)

On January 22, 1970 Professor Dr. E. C. J. Mohr, nestor of tropical soil science, passed away in the age of over 96 years. Pupil of 3 Dutch Nobel-prize winners, Van 't Hoff, Van der Waals and De Vries he concluded his academical training as a chemist with full honours in 1897. As early as 1888 he had, however, already indicated his preference for soil science a very new discipline in its very embryonic stage. Starting in 1898 as a chemist of the department of Sumatra tobacco of the, even at that time, world famous Botanical Gardens at Bogor, Indonesia, he got full opportunity to study the soils of that specific area. This led to his growing interest which, after a study tour to the U.S.A. caused him to accept the position of head of the Laboratory of Agrogeology and Soil Research at Bogor in 1906. He then became the indisputable leader of tropical soil science. When he had to retire at the now young age of 47 years he was the author of 68 papers on soils per se and soils as related to agriculture and technology. Upon his return to the Netherlands he was appointed Soil Advisor to the Royal Tropical Institute and Professor of Soils at the State University of Utrecht. In the period 1934—1938 he published his



4 volume monograph on Soils of the Tropics, with special reference to the Netherlands Indies. Thanks to R. Pendleton's translation in English in 1944 this work got world fame. Mohr was 77 years when he surrendered to international pressure to write a new version of this earlier work and in 1954 appeared Tropical Soils, with the undersigned as the co-author. His very versatile mind made it possible that he actively assisted in the reprinting of Tropical Soils in 1958 (he then was 85 years of age) and kept on showing interest in the new edition of this book which will be published by the end of 1970. Till his last days this extremely noble scientist, who during his life was honoured with the Medal of the Royal Tropical Institute, was a Knight of the Kingdom of the Netherlands, and Honorary Member of the International Society of Soil Science, was blessed with a clear critical mind and a warm open heart for his numerous friends of all ages. His picture will stay long in the memory of all who had the privilege of knowing him.

F. A. van Baren

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ON

RECLAMATION OF SODIC AND SODA-SALINE SOILS

Yerevan, Armenian S.S.R., 1969



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Soil Classification

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