

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

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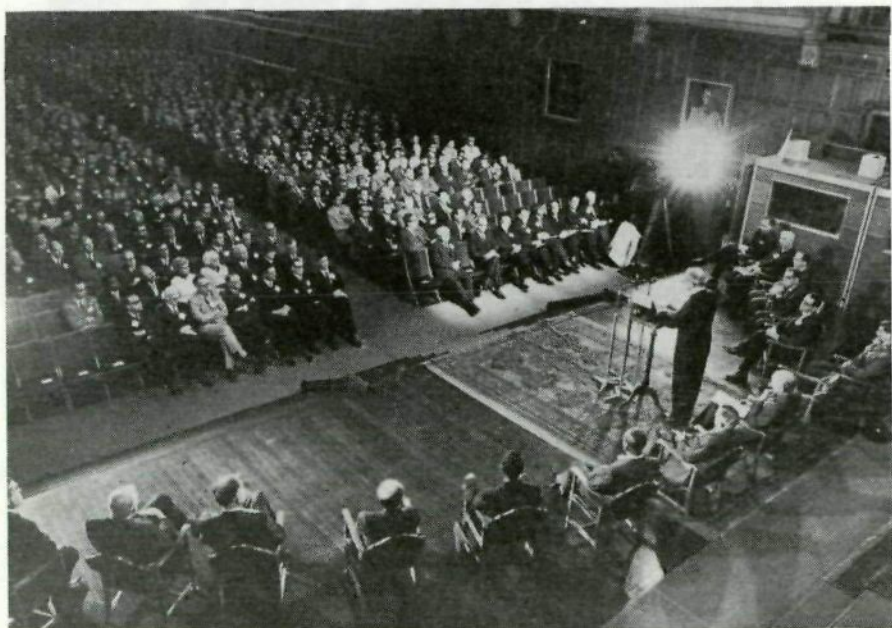
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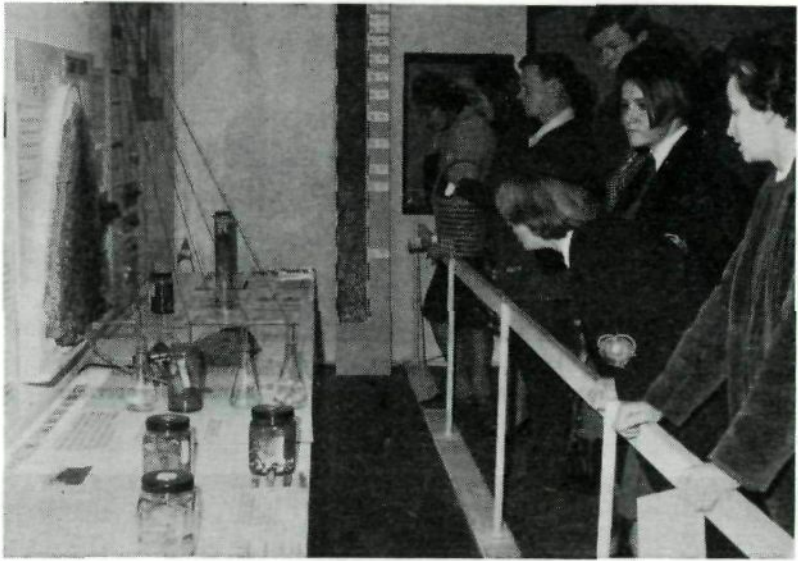
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Mrs. and Dr. Hallsworth, President of the Society and the Congress, charming hostess and host to numerous overseas participants.



The opening of the 9th International Congress of Soil Science, Adelaide, Australia, by His Excellency the Governor-General of Australia.



Public interest in the Soil Exhibition organized at the occasion of the 9th International Congress of Soil Science, Adelaide, Australia.

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No. 33

1968

THE 9th INTERNATIONAL CONGRESS OF SOIL SCIENCE

This Congress indeed has been an outstanding achievement as regards scientific level as well as from the organisational point of view.

As mentioned in Bulletin no. 32 the Organizing Committee, with the aid of a large editing board carefully screened the papers sent in for presentation, thus limiting the number to 310, which all were published in 4 very expertly edited volumes of proceedings and presented to the participants on registration. This limited number allowed a strict time schedule to which was strongly adhered, no un-announced papers being admitted for reading, papers of absent authors (still too many) being read by abstract. This made ample time available for discussion. The multilingual simultaneous translation was near perfect thanks to a severe training of 6 months of 18 non-professional interpreters and the aid of 9 professionals from abroad. Mention should also be made of the excellent Soils Exhibition which drew wide public attention.

The choice of pre- and post-congress tours was of such a diversity that each of the members from abroad really could get acquainted with the soils of the vast Australian continent. Special thanks are due to our now past-president Dr. E. G. Hallsworth and Mrs. Hallsworth who also acted as the charming host and hostess to a number of visitors from abroad on many occasions, to the Congress Manager T. Paltridge, to Dr. J. W. Holmes, Chairman of the editing committee and to Mr. C. B. Wells who was responsible for the organisation of the simultaneous translation.

The Congress was attended by 865 participants, representing 52 countries as listed below:

Argentina	1	Indonesia	1	Portuguese	
Australia	490	Iran	1	West-Africa	2
Austria	1	Israel	3	Rhodesia	1
Belgium	5	Italy	7	Rumania	3
Brazil	1	Japan	12	Solomon Islands ..	2
Canada	28	Kenya	1	South Africa	2
Cuba	3	Malawi	1	Spain	4
Czechoslovakia ..	4	Malaya	7	Sweden	4
Denmark	2	Morocco	1	Taiwan	1
Fiji	1	Netherlands	8	Tchad	1
Finland	1	New Caledonia ..	1	U.A.R.	2
France	8	New Zealand	44	Uganda	1
Germany East	2	Norway	1	United Kingdom ..	30
Germany West	10	Pakistan	1	U.S.A.	118
Ghana	2	Peru	1	U.S.S.R.	23
Greece	2	Philippines	5	Venezuela	2
Hungary	1	Poland	1	West Indies	1
India	5	Portugal	5		

For the topics discussed reference is made to Bulletin 32, 1968 in which they were duly listed.

The Society was greatly honoured by the fact that the Governor-General of Australia, His Excellency the Rt. Hon. Lord Casey, PC, GCMG, CH, DSO, MC, KStJ, showed his personal interest by addressing the audience at the opening session.

On Tuesday, August 6, 1968, 11.30 h. about 1200 people filled the Bonyhon Hall of the University of Adelaide to take part in the Opening Session of the 9th International Congress of Soil Science.

The following business was transacted:

1. Opening of the Congress.
2. Address by His Excellency the Governor-General of Australia.
3. Opening of the General Meeting and working session by President Hallsworth.
4. Report of the Secretary-General and Treasurer of the Society.
5. Report on the New Rules.
6. Other business.

1—4: The President of the Society opens the Congress and announces that the Congress is honoured by the presence of his Excellency the Governor-General of Australia who thereupon pronounces his address of welcome:

Dr. Hallsworth, President of the Ninth International Congress of Soil Science, and Chief of the Division of Soils of C.S.I.R.O. - Professor Badger, Vice Chancellor of the University of Adelaide - Sir Frederick White, Chairman of C.S.I.R.O. - Presidents of the seven Commissions of the Congress - Dr. Bramao, representing the Food and Agriculture Organisation of the United Nations - Dr. Batisse, representing U.N.E.S.C.O. - Delegates to the Congress - Members of the International Society of Soil Science - Distinguished guests - Ladies and gentlemen.

I am glad indeed to have the privilege of taking part in the opening of this great Congress of Soil Scientists from a great many countries of the world.

By reason of the number and distinction of you gentlemen taking part in it, this is one of the most important Conferences that we have had in Australia. I need hardly say that we very greatly welcome you here — perhaps particularly the great many Scientists of distinction who have come from so many countries. Your deliberations will benefit not only Australia but also all the many countries that represent a very large part of the existing and potential food producing areas of the world.

The International Society of Soil Science is one of the oldest of the international scientific societies. You are all here individually as Scientists in your own right and not representing, in any formal sense, the countries from which you come.

This is the first full Congress to be held in any part of the Commonwealth of Nations for thirty years, and is the first to be held in Australia.

You gentlemen can be said to comprise most of the world's outstanding authorities in all branches of Soil Science.

Soil Science has no man-made complications that you have to observe — no politics and no ideologies or racial considerations — to divert you from serving mankind by your research.

However you have the highly complex nature of your subject or subjects which is more than enough for anyone. In addition you have the problem of translating your findings into language that will be readily understood by non-scientific people and applied to the growing of the most appropriate plants and pastures for the benefit of man and beast.

It can be said with truth that the principal requirement in the world today is a major increase in food production. Towards this end, Soil Science is the most important and practical factor. This makes this great Conference of high national and international importance.

Soil is the naturally occurring basis of plant life, and so is the seed-bed or medium on which practically all life is dependent.

Your work and research deals with the thin skin of the surface of the globe on which farming and pastoral activities depend.

Soil Science includes consideration of the chemical, physical, biological and geological aspects of soils, and much else.

Yours is a relatively new science, for practical purposes only a very few generations old. So far as Australia is concerned, research into soils can be said to have started here in Adelaide about 40 years ago, and has since, of course, spread out with research laboratories and out-stations in widely spread parts of this continent.

The tasks of soil research in Australia are probably greater than in practically any other country, by reason of the geographically great size of Australia and of our wide range of climates and of soil characteristics from the tropical north to the temperate south. Also the very great range of conditions from our arid zones to our well watered tropical and temperate areas.

Australia is a geologically very old continent that has been weathered, leached and eroded for a very long time, and in addition Australia is on the whole a very dry country. In consequence we have some of the most infertile soils in the world.

All the leaching, weathering and eroding explains the fact that a good deal of our land is *phosphorous and trace-element hungry, to a greater extent than the younger soils of many other countries.*

Those of you who come from other countries may care to know that the Division of Soils is one of thirtyfour Divisions of the Commonwealth Scientific and Industrial Research Organisation — C.S.I.R.O. — which between them are concerned with scientific research for the promotion of primary and secondary industries in Australia.

C.S.I.R.O. is the largest single scientific research organisation financed by government in Australia. It employs over 6,000 people, of whom nearly 2,000 are professional staff engaged directly in scientific research or in the close support of such research. Its annual budget at present is about \$ 43 million which has increased annually over recent years at an average rate of about 10% per annum. The Division of Soils uses about 3.5%, or \$ 1.5 million, of the available funds.

In addition to C.S.I.R.O., a considerable amount of research is undertaken by the Departments of Agriculture of the Australian States and by the Universities, with which C.S.I.R.O. is in effective liaison.

It has always seemed to me a strange thing that, although the earth is many thousands of miles in diameter, yet we are confined to a foot or two of the earth's surface for your study and for the world's sustenance.

On another subject — the development of synthetics is coming into our lives at a great rate — man-made commodities that serve particular purposes allegedly better than naturally-occurring products. However it would seem to a layman that soils are one of the few things that are unlikely to be replaced by synthetics. I suppose it would be possible to make-up synthetic soils for particular purposes, but the scale on which this could be done would be so small in relation to our requirements as to be of no particular consequence for practical purposes.

Like most generalisations, one has at once to make some small reservations — in that the addition of fertilizers and of missing trace elements that can and do change soils from being relatively unproductive to being productive. However I suppose these can be regarded as additives rather than synthetics. If anything could be said to be a substitute for soil, I suppose hydroponics might be so considered, but I believe it is only practical in a very small way by reason of cost.

There has been created lately the Australian Conservation Foundation which in effect is dedicated to maintaining and improving the quality of the human environment. Soil may be said to be the most important natural resource and is practically irreplaceable. Man and animals renew themselves, but not the soil. Australia can reasonably expect to have a population of 25 millions in place of our present 12 millions within a generation, so that the quality of our soils will become progressively more important as time goes on. Coping with this, in this and many other countries, is very largely the task of the Soil Scientist.

As with so many other things, the average man knows practically nothing about soils, which to him is no more than dirt, although I expect you accept with resignation this denigration of the subject-matter of your speciality.

Dr. Hallsworth, ladies and gentlemen, I have said enough. You have a long and important agenda and I must be jealous of your time. I say again how much those of you who come from other countries are welcome in Australia.

I am now glad to declare open this Ninth International Congress of Soil Science — and to wish you well in your important deliberations.

The President then calls upon the Secretary General and Treasurer of the Society to read his reports.

The President then delivers his address.

Perspectives in Soil Science

The rarity of the occasion for a Presidential Address to the International Society of Soil Science lays a peculiar burden on its author to make his material appropriate to the opportunity. Rarely in our field does one have the chance to talk to so large and diverse a gathering of scientists — a captive audience withal, and one temporarily bereft of the ability to answer back!

I looked for inspiration to the addresses of my distinguished predecessors — but they are so varied as to provide no precedent. So I thought to make the Presidential Address a quadrennial review of the state of the Nation, listing the accomplishments of the past four years, the needs of the future, and defining the philosophy with which we approach the problems of the present.

However, Soil Science is a multi-disciplinary subject, and advances over the whole field of science impinge on soils, and to scan the whole field is impossible. Even in the more restricted field of papers abstracted by the Commonwealth Bureau of Soil Science, the rate of increase is some 8½% per annum. The last four years list 12,598 papers compared with 8,560 papers published in the same fields in the four years preceding our Bucharest Meeting.

Since a meaningful review is manifestly impossible, I propose instead to describe the perspectives of soil science in 1968. As Yaalon (71) concluded, soil research has national characteristics, for perspectives of the workers concerned reflect their environment. In Australia, our perspective is influenced by four factors — firstly of the great age of the land surface, in contra-distinction to those areas of the Northern Hemisphere where Soil Science had its origins; secondly, of the long period of isolation of Australia from plant and animal species developing elsewhere; thirdly, of the general aridity, and hence the importance of the water balance; and fourthly, of the fact that, alone amongst the Continents, the Australian land was never cultivated by man until British settlement commenced 180 years ago.

In looking for perspectives in the world at large, I related the papers abstracted to the field of interest of the Society's commissions, combining those for Commission VII with those for Commission I, and comparing 1944—47 with 1964—67.

The results are as follows:

Commission	1944—47	1964—67
I and VII Soil Physics, Mineralogy	21.3	16.3
II Soil Chemistry	21.0	21.4
III Soil Biology	12.0	18.0
IV Soil Fertility and Plant Nutrition	27.0	22.0
V Soil Classification, Survey and Formation	9.2	14.2
VI Soil Technology	5.6	3.6

These figures merely give an appreciation of changes in emphasis. (Jacks. 30.) They show a fall in Soil Physics and Mineralogy, and marked rises in Soil Biology, and the subjects of Commission V.

Perspectives are more elusive. They depend not only on the position of the observer, but also the direction from which the light falls, and it is but rarely that a piece of work appears that so illuminates the field as to give a new perspective. Few papers stand out as beacons of light, and because of the pressure to publish, and consequent difficulty of reading all the papers that result, these few may become buried under the debris of research.

Since almost all the work in the papers listed in Soil Fertility and Plant Nutrition is chemical in nature, in looking for perspectives I have combined these with the soil chemistry papers. This gives me four main categories — physics, chemistry, biology and pedology. On this grouping the chemical category is by far the larger, and in 1964—67 44% of all papers published fell within it. About one-tenth of these dealt with organic matter, and it is noteworthy that the impact of this, the direct product of the biotic factors, and of the biotic factors themselves, is becoming increasingly apparent in soil physics and pedology also.

Physics

In soil physics, the main emphasis of published papers is on water movement and water balance — with a much smaller proportion dealing with soil air, structure and temperature. Much of the work is a development (23, 32), or an extension in other countries of the water balance studies illuminated by Penman's (48) work of 20 years ago. Greater attention is being given again to underground movement (29, 2), and the use of deuterium (51) and radio-isotopes (6, 44) are providing an increased precision to the measurements. It is now generally realised that there are two components of movement (49, 69) — mass flow and diffusion — and that the relative contribution of each of them may vary widely under different circumstances. With the increasing use of mathematical analysis, the development of computer techniques in the study of model systems (50, 52) and the application of these to actual conditions, prediction of water balance and movement in the non-swelling soils is reaching the limits of possibility. In clay soils (13), however, there is still much to do.

The advances that have been made in our understanding of the fluid phase of the soil, by an appreciation of the importance of the energy balance and the application of diffusion theory, stand in marked contrast to the lack of change regarding the physics of the solid phase. The improvement of permeability by the application of gypsum (56) is being used over progressively wider areas. On the mechanisms of structure formation, however, there has been little new light shed since the ideas of Walter Russell (53) and of Lutz (38) developed thirty years ago.

Yet I think it is fair to say that we are beginning to look at structure with a new perspective — that it is a matter of surfaces — of the nature of the surfaces of soil particles and of the reactions that can occur between them. The investigations contributing to this are several-fold. They include — as a first requirement — measurements of surface area (40), and marked improvements have been made both in time required for, and in the accuracy of the determination. They include also studies of the nature and transformations of groups present on the particle surface — and here Fripiat's (22, 27) use of infra-red spectroscopy has opened a new field.

Studies on reaction between transition elements and mineral surfaces are making progress (21, 65), although the difficulty of defining the ionic species present in the liquid phase, and the possibilities of a change in species with change in pH (17, 21), inevitably reduce the rate of advance. Reactions between organic compounds and mineral surfaces are also the subject of investigations at several centres (25). The use of model compounds (19, 20), and fractionation and recognition of compounds present under varied (33) conditions in the field are both contributing to understanding.

Simultaneously, a new perspective on structure, in the literal sense, has been opened by developments in optical and electron microscopy. The improved acquaintance with the microstructure of the soil that has been obtained by the former (10, 31, 45) is evidenced by the minute trickle of papers, amounting to 0.1% of the total, that is now coming from different parts of the world. Electron microscopy of soil structure, because of the difficulties of the material, has not yet provided the exciting horizons that its use in molecular biology would lead us to expect. Nevertheless, with the development of the scanning electron microscope and the electron probe, the next few years should see a fascinating revelation of soil structure.

Methods for the measurement of soil strength have also received a fresh look, and although few new principles (62) in techniques have arisen, several old techniques have been refined, and some, such as the use of X-rays (24) to measure the density of small zones of material have been applied to soils for the first time. Whilst these have an almost immediate relevance to the physics of cultivation (39), they do not give all the answers, and raise a new question, for they have shown that plant roots can penetrate soils which show mechanical strength far greater than the root itself can exert (5).

One new perspective is the realisation that the adsorption of organic matter on soil particles is not always beneficial. I refer to the concept of non-wettability. This results from the adsorption of a layer of an organic compound over the surface of soil particles in such a manner as to make them hydrophobic. Since the substance appears to be produced by fungal action from the residues from certain plants, its most marked effects have been shown on soils of minimum surface area, the sandy

soils (7, 61). Were sufficient of the compound concerned to be produced in more finely textured soils, however, the restrictions on water penetration would be magnified, for the finer the pore, the greater the pressure needed to force through it a liquid with a high contact angle. This is no new problem. The original observation that fungal decomposition of organic matter in the soil could lead to a restriction of water intake was made by Schantz and Piemeisel (58) in the States in 1917, and their classical paper on "Fairy rings" seems another of the beacons long buried in the erosional debris of research. How widely the phenomenon of non-wettability extends, how seriously it curtails growth, yet remain to be determined. Is it stretching the imagination too far to suggest that it could be turned to advantage? That in the light textured soils in low rainfall areas we could, by confining the fungus to strips between more widely spaced rows of crops, use the non-wetting surface of the strips to shed all the water that falls on to the narrow bands in which the crops were growing, and so to provide sufficient water to the crop as to allow an extension of arable agriculture?

Chemistry

In soil chemistry many of the papers make dreary reading. So often they are merely the repetitions on another soil, in another area, for another nutrient of an investigation done many times before. By and large they contribute little to our knowledge, for either the parameters are inadequate or the bounds of the investigation too restricted to allow valid generalisations to be made, even from one paddock to the next.

These chemical studies fall into three groups. The first concerns the nature, weathering, and formation of the inorganic constituents, and of the factors responsible for their distribution in the soil mantle. The second concerns the ability of soil to supply the elements needed for the growth of plants. The third concerns the nature and transformations of the organic components of the soil, which are themselves the direct result of the growth of plants. It is increasingly obvious that these three are not independent, but quite interrelated. Indeed, if we take into account what is known of the nature of the surface of soil particles and of the constituents in the soil solution, and apply the principles of surface chemistry, then it is only a question of time before a coherent theory of soil behaviour and soil-plant-animal interactions will emerge.

It is now half-a-century since Langmuir (36) published his relationship between concentration in the fluid and the quantity adsorbed on the solid surfaces, but until recently it had little impact in soil thinking (43).

In the adsorption of ions or molecules from solution, however, unlike adsorption from a gas there will inevitably be interactions both between the adsorbate particles and the solvent molecules, and competition between the adsorbate particles under consideration and other ionic or molecular species present in solution. Put in another way, the partition of the adsorbate particles between solid/liquid interface and the liquid phase itself will vary with the nature and composition of the liquid phase. A change in the nature of the liquid phase in contact with say an aluminum phosphate surface, as for example by the exudation from plant roots of organic and amino acids, giving locally a high concentration in the soil solution of components capable of chelating aluminum, would result in a shift in partition between solid interface and liquid phase. Depending on the point of view, one would describe this as weathering, or as the preliminary to nutrient adsorption. In terms of the Langmuir equation, however, all such changes in the nature of the fluid phase are departures from ideality. Their impact needs to be considered, but it can be accounted for.

The extent to which the soil surface departs from the ideal condition of constant area and uniform nature will also affect the application of Langmuir's equation. The extent to which the surface area can change has been illustrated by Kittrick and Jackson's work (34) on the reaction of kaolinite with phosphate, but the light flowing from the exquisite investigation does not appear to have illuminated as many aspects of soil work as it should have done. Perhaps another beacon being buried under the debris of research.

Clearly, in most surface reactions on soil particles, there is more than one type of reaction involved. Even assuming that the rate of change of area of surface of one type to that of another was extremely slow, a standard Langmuir plot would be expected to give a curve rather than a straight line, with the sites of greatest bonding energy being filled preferentially to those of lower attraction. Where most

of the reacting sites fall into two categories, of widely different bonding energy, a plot of hyperboloid form would be expected, and a number of these can be found in the literature (55). The work that has been done on cobalt in Adelaide illustrates this perspective perfectly. In most of the soils examined, it has been found that the bulk of the cobalt is adsorbed on manganese dioxide (65). In agreement with this, a straight line Langmuir plot is obtained, for which the bonding term (b) does not differ significantly between soils (67). In those soils in which much montmorillonite is present, however, the graph differs significantly from a straight line — and it is clear that at least two types of surface are concerned in the reaction.

Since manganiferous nodules constitute well defined sinks for any added cobalt, by adding Co^{60} to moist soil it is possible to get some idea of time to equilibrium. We have followed this movement by radio-autography, after adding Co^{60} to a non-fixing soil with which small particles of manganese dioxide had been mixed. Evidence for movement to the manganese dioxide surface was visible in about two days, and movement appeared to be almost complete in 50. The transfer of ions through water saturated soil, in response to trends in chemical potential, would seem consequently to be fairly rapid.

An enormous effort has been put into attempts to find methods of measuring available nutrients. Most of these have been simple extractive procedures, and in most cases no attempt is made to obtain any fundamental measures. Rather the attempt is to find some method giving a good statistical correlation with crop yield (9) and in areas of uniform soil and climate such methods are proving of value (11). In our work with cobalt, we found that the availability of added cobalt for plant growth is inversely proportional to the quantity of cobalt present. That is, soils high in native cobalt fixed the added cobalt most strongly (1). How widely does this phenomenon occur?

Certainly the krasnozems of Eastern Australia, which contain considerably more phosphate than most soils, are notoriously deficient in available phosphate.

Such findings would accord perfectly with the idea that the surfaces of soil particles normally present sites of adsorption of more than one type, each type having a different bonding energy. Each element, in fact, is present in pools of varying availability. This concept, which is already widely used in biology, has important implications. For example, it seems logical to assume that as any element, such as phosphorus or cobalt, is released by weathering from the mineral in which it was originally present it will be distributed between the alternative sinks of, say, the labile pool on the one hand, and the difficultly available pool on the other. In a mature soil, an equilibrium distribution will be reached. If the element is added in soluble form, as in the application of a fertiliser, it would consequently be expected to distribute itself between labile pool and difficultly available pool in the same way as that released by weathering. From this perspective, the ratio of the quantity of an element in the labile pool to the total quantity present should be related to its availability to plants. For cobalt, at least, this appears to be so, for the ratio between labile and total cobalt in the soil directly affects the quantity of added cobalt that is absorbed by the plant (68).

Biology

New perspectives are also appearing in biology. The great bulk of research continues to be on bacteria, and their recognition, ecology and effects on organic matter. Work on rhizobia still forms a major portion. In this work, the Australian environment itself gave one perspective great clarity, for during the long isolation of Australia from the rest of the world, leguminous species of the family **Trifoliaceae** had developed elsewhere — such widely cultivated plants as lucerne and the clovers — which required a specialised rhizobial flora (41). The attempt to introduce them to Australia, following settlement, emphasised with startling clarity that qualitative differences in microflora could decisively determine the nature of the plant population and the pattern of land use. The findings that 25% of the Australian soils were lacking in **Thiobacillus** (63), or that strains of mycorrhizal fungi infesting **Pinus radiata** differed by 300% in their ability to absorb soil phosphate and transmit it to their hosts (8) from part of this perspective.

The role of earthworms has been frequently praised, and occasionally studied (), since Darwin's classic work of a hundred years ago. But although Kubierna has pointed to the importance of their excreta in soil humus, and Kuhnelt in Vienna (35) and Balogh in Budapest (4) have been describing and classifying soil animals for twenty years there has been little change of emphasis. Papers published have

increased by 50% in each of the last three quadrennia. Work is still largely descriptive and ecological. Yet twenty years ago, the New Zealanders were pointing out that an acre of pasture carried as large a weight of living animals below ground as grazed the grass above (57). We still don't know whether this is good or bad, and little work has been done to decide it. In the world at large, consequently, the perspective is blurred, but in the harsh light of Australia we see very clearly that ants and termites, rather than earthworms, dominate the soil fauna of this continent, and investigations have begun (37), planned to determine how much of the plant production these creatures consume, whether they pay their way in soil improvement or whether, like rabbits, they are a luxury that we cannot afford to keep.

Pedology

Twenty-five years ago, from the teachings of Glinka and his pupils in Russia and Marbut and his school in America the genetic classification of soils seemed sacrosanct. This was logical enough, for the land surfaces of both countries had been largely swept clean of soil by the ice-sheets of the Pleistocene, and their modern soils had developed under climates not greatly different to those of the present day. In the tropics and sub-tropics, however, the land has been exposed continuously for much longer periods of time. Land masses with well-developed soils on them have been lifted, tilted or lowered by tectonic shift. Around the coasts eustatic changes in sea level associated with the glacial periods have caused marine transgressions. In the moisture climates of other eras, vegetation had spread across what are now deserts. The volume of soil that moved by slumping and surface creep down the slopes of ancient hills far transcended the erosion of the once-glaciated north. In short, the soils of the tropics and sub-tropics are the products of polygenesis, and it is a matter of speculation as to which features are modern and which inherited. The trend consequently has been to classify soils solely on the basis of their profile features, and a tremendous amount of work has been put into this — by Smith and his team in the U.S.D.A. (60), by D'Hoore in Africa (14). The perspective has moved from a description of characteristic horizons. These have been capped by the most imaginative scheme of all — the correlation of descriptions of the soils of the world, with the ultimate aim of a World Soil Map, delineated in self-consistent terms. This immense undertaking has reached a stage which permits a draft Map of the Soils of the World to be shown at this Congress (47).

A different approach has been developed in Australia, in which it is recognized that the profiles of the different soil properties do not necessarily vary in a related manner. If a method could be found for describing each property profile separately, and then linking each description together, it should be possible to develop a system which would encompass all variations encountered in the field. Using an alpha-numerical system, Northcote (42) has developed a Key for soil description which does just this, in which subjective judgements are reduced to a minimum.

Considerable advances have been made in studies of the geomorphic relationships of soils, and in the photo-interpretation of geomorphology and vegetation. Indeed, using the Key (3), in ground traverses as an adjunct to photo-interpretation, it has been possible for a co-ordinated team to re-map the soils of Australia, and as the result the Atlas of Australian Soils is presented to this Congress. The use of radar-remote sensors for mapping of vegetation, geomorphology and soils as developed by Simonett (59), offers intriguing possibilities for the future.

Studies of rock weathering and of soil formation have continued to attract attention and in this two new perspectives can be discerned. The first is that, with the improvement in analytical techniques, it is now possible to approach pedology as an experimental science. The French school (46, 47) has shown the potential of controlled studies of rock weathering. Yaalon (72) has shown the possibilities of applying the conceptions of chromatography to the movement of anions in a soil profile. The second is the slow recognition of the role of the biotic factors in soil formation as evidenced by the inclusion of this heading in the Abstracts. Whilst it is inherent in this recognition that a change in the biotic component means a change in soil, I question whether the full implications of the biotic components are generally appreciated. Yet they affect every aspect of soil science.

The effects of vegetation are manifold. The nature of the above ground parts affects the water balance (28), and hence the quantity of rainfall which flows through the soil to the ground water. In a grazing system (18) this quantity in turn can be affected by compaction, and by variations in the extent of defoliation. Changes in through-flow of water obviously affect leaching, and the extent to which

elements in solution are removed from the pedon. Below ground, the nature and distribution of root systems will influence the structure pattern, and determine the depth from which water is removed by transpiration. Apart from their direct effects on structure, vegetation also affects soil aeration, for Greenwood (26) has shown that in general, oxygen will diffuse more rapidly through a root than it will through water. In consequence, root growth is likely to have an aerating effect on the soil. Numerous morphological features follow this, such as the pipes of ferric oxide that line root channels in gley soils.

The total quantity of organic matter entering the soil and its characteristics are functions not only of the vegetation, and of whether the plants are grazed or harvested, but are also modified by micro-fauna and micro-flora.

Apart from their effects on soil structure, the organic materials have two direct effects on the chemistry of the inorganic fraction, in both cases directly affecting reactions at the liquid/solid interface. In the first of these, organic compounds enhance the solubility of many metal ions, notably those of the transition elements, by chelation. In this way they may indirectly affect the solubility of silica. In addition Evans (15) has shown that A.T.P. and alginic acid can both dissolve silica, even from quartz. In the second, organic compounds can be related to points of deposition, either indirectly as when the chelate is oxidised by soil organisms (12), or directly by acting as a template for crystallisation. This has already been demonstrated for phosphate (54).

In Australia where, since settlement, so many changes have been made in the flora and fauna of this once isolated continent with the deliberate and accidental introduction of species from overseas, prickly pear and *Cactoblastis*, modern legumes and rhizobia, radiata pine and mycorrhiza, rabbits, sheep and earthworms, the importance of the biotic component is demonstrated with clarity that is lacking in long cultivated regions. Perhaps from this visit our colleagues from overseas may get a new perspective on the effects of the biological constituents of soils on their character, structure and fertility, as well as on the nature and distribution of soil constituents, from Genesis to Exodus.

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Report of the Secretary General

Members

Membership stayed at a constant level. On June 1st 1968 a total of 4440 was inscribed, residing in 93 countries, as compared to 4437 in 91 countries as per June 1st, 1964. It appears that the initial loss in members resulting from the increase in membership fee was fully compensated by new inscriptions.

The following alphabetical list of countries shows the present position compared with membership on June 1st, 1964.

	1-6-'64	1-6-'68		1-6-'64	1-6-'68
Afghanistan	—	1	Kenya	6	4
Algeria	—	1	Korea	3	2
Argentina	174	208	Lebanon	6	5
Australia	102	319	Luxemburg	2	2
Austria	84	80	Lybia	1	—
Belgium	172	117	Madagascar	4	—
Bolivia	1	1	Mexico	51	38
Brazil	33	35	Morocco	4	5
British Guyana	3	—	Nepal	1	1
Bulgaria	39	32	Netherlands	109	103
Burma	3	1	New Zealand	279	130
Cambodia	—	1	Nicaragua	—	—
Cameroun	4	3	Nigeria	6	14
Canada	207	212	Norway	6	5
Ceylon	2	6	Pakistan	10	12
Chile	2	4	Paraguay	1	1
Chine	1	1	Peru	3	15
Colombia	10	7	Philippines	13	14
Congo	1	2	Poland	49	37
Costa Rica	3	12	Portugal	89	99
Cuba	1	1	Rhodesia	4	10
Cyprus	2	2	Rumania	77	111
Czechoslovakia	21	35	Senegal	1	11
Dahomey	1	—	Seychelles	1	—
Denmark	68	63	Sierra Leone	—	2
Dominican Republics	—	1	Singapore	—	1
Ecuador	3	3	South Africa	69	112
El Salvador	1	1	Spain	104	79
Ethiopia	1	—	Sudan	10	13
Fed. Rep. of Germany	136	154	Surinam	2	3
Federation Malaysia	9	7	Swaziland	—	3
Finland	19	26	Sweden	60	78
France	81	70	Switzerland	17	16
German Dem. Rep.	73	73	Syria	3	3
Ghana	10	28	Tanzania	1	2
Greece	6	12	Thailand	2	11
Guatemala	3	4	Togo	1	1
Haiti	—	1	Trinidad	6	6
Honduras	3	1	Tunisia	3	7
Hungary	37	37	Turkey	10	8
Iceland	2	2	U.A.R.	66	39
India	71	62	Uganda	4	9
Indonesia	3	6	United Kingdom	232	280
Iran	5	20	Uruguay	1	2
Iraq	5	5	U.S.A.	1239	967
Ireland	54	31	U.S.S.R.	82	82
Israel	126	67	Venezuela	9	11
Italy	78	195	Vietnam	2	—
Ivory Coast	1	1	Yugoslavia	40	41
Jamaica	4	2	Zambia	4	3
Japan	79	89			

The period 1964—1968 again brought the loss of a number of colleagues. Obituary notes have appeared in our Bulletin but their names merit to be mentioned once more:

- 1964 — Herbert Greene (U.K.); Honorary Member G. Bertrand (France).
1965 — J. V. Botelho da Costa (Portugal); W. Gardner (U.S.A.); Academician I. N. Antipov-Karataev (U.S.S.R.); Honorary Member W. P. Kelly (U.S.A.).
1966 — Sir E. John Russell (U.K.); J. K. Dixon (New Zealand); J. M. Albareda Herrera (Spain); A. Musierowicz (Poland); V. Novák (Czechoslovakia).
1967 — J. Hudig (Netherlands); Past-President N. Cernescu (Rumania); Sterling A. Taylor (U.S.A.).
1968 — H. Gisin (Austria); E. Protopopescu-Pake (Rumania); Th. Sidel (Rumania); Sh. Ionescu-Sisesti (Rumania); J. Tomaszewski (Poland); Mrs. Jadwiga M. Ziemiecka (Poland).

During the Congress the sad news was communicated of the demise of Professor Mircea Popovatz (Rumania) and Professor Prattolongo (Italia).

All these late colleagues have devoted time and energy to soil science. Let us hold their memory in high esteem.

Meetings of I.S.S.S. Commissions

Commissions II and IV conjointly assembled in Aberdeen, Scotland, as from 5—10 September 1966, followed by a post-conference tour. Commission III organized a conference on the "Dynamics of Soil Ecology" in Braunschweig-Volkenröde (W.Germany) from 5—10 September 1966. Commission V held a meeting on Mediterranean Soils in Madrid (Spain) from 12—18 September 1966. A tour through part of Moroc preceded the conference, which was followed by an excursion through Southern Spain and Portugal.

Reports on these activities have been published in the various Bulletins.

International Contacts

Our Society was represented by Drs. Tamm and Odin (Sweden) at the 4th Session of the Commission for Climatology (C.C.I.) in Stockholm from 12—26 August 1965.

Past-President Dr. R. Bradfield represented I.S.S.S. at the meeting of the Commission for Agricultural Climatology in Manila (Philippines) from 15—29 November 1967.

The Secretary General assisted at various meetings of the Panel for the Soil Map of the World Project, resp. in Rome (1965, 1967, 1968) and Moscow (1966).

He participated in the UNESCO-supported Salt Affected Soils activities in Budapest (1967) and Yugoslavia (1968) and represented the Society in a meeting of the Commission Internationale du Genie Rural in Paris (1966).

National Societies

Since 1964 two more societies were founded: the Columbian Soil Science Society and the Soil Science Society of the German Democratic Republic, both in 1967.

Secretarial work

Between August 1, 1964 and July 24, 1968, 3738 letters were received and 2938 were sent off. Also 37,882 copies of the Bulletin, 4758 copies of the draft Rules have been dispatched. 64 book reviews were published. The sale of 385 copies of the Soil Science Dictionary, 650 copies of the Japanese Soil Colour Chart and 64 copies of Soil Micromorphology was handled by the Amsterdam Office.

Report of the Treasurer

The following review of income and expenditure was presented for approval by the General Meeting.

Receipts		Expenditure	
Contributions	f 85.534,76	Purchase of bonds	f 16.765,32
Bonds sold	" 2.290,50	Costs of printing	" 24.702,98
Interest	" 2.737,96	Postage etc.	" 22.122,17
Charts, dictionaries	" 15.769,78	Secretarial ass.	" 18.237,50
Balance	" 3.183,78	Travelling expenses	" 6.604,71
		Charts, dictionaries	" 13.822,64
		Miscellaneous	" 1.592,96
	f 103.848,28		f 103.848,28

The detailed report was audited by an Official Auditor and has been submitted to inspection by a Committee set up by the Council.

It consisted of Dr. M. Fieldes (New Zealand) and Dr. H. B. Obeng (Ghana). Dr. Fieldes reported that the Committee had found the Treasurer's administration to be in good order and proposed that the financial report be accepted. The General Meeting then approved both the secretarial and financial report. The President thanked Dr. F. A. van Baren for the way he had handled the business of the Society.

5. New Rules

The New Rules, forwarded as a draft copy to all members, have been adopted with a few minor changes.

Item H.1.C was altered to read:

Not more than six representatives of the members who are resident in countries without one of the above National Societies, provided there are at least twenty members of the I.S.S.S. for each representative.

Item I.10 was altered to read:

A member may at any one time, be an officer of only one Commission or Sub-commission.

Item M.3 was altered to read:

The President and the Secretary-General of the Society may jointly nominate one or more members to represent the Society at meetings of other Societies or at Conferences at which topics of interest of the Society are being discussed.

The second Meeting of the Assembly took place at A.M. Thursday, August 15th, with the following agenda:

1. Opening.
2. Future Congress.
3. Election of Offices of the Executive Committee.
4. Officers of the Commissions of the Society.
5. Communications.
6. Honorary Members.
7. Resolutions.
8. Address of out-going President.
9. Address of newly elected Vice-President.
10. Closure of the Congress by the Lt. Governor of South Australia, Sir Mellis Napier.

1. The President opened the meeting and mentioned that the Council had held three sessions to discuss the Society in accordance with the provision of article H-2 of the Rules.

Two items of general interest should be mentioned.

a) Future congresses

The financial consequences of organising a congress, including the costs of printing the Proceedings and simultaneous translations have been studied by an ad-hoc Committee consisting of the members: Prof. J. P. Quirk (Australia), Chairman. Dr. G. H. Bolt (Netherlands), Dr. I. D. Staicu (Rumania) and Dr. H. B. Obeng (Ghana).

After thoroughly discussing the matter the Council decided that a Working Committee be nominated, consisting of the following members: Dr. E. Schlichting (W.Germany), Convenor, Dr. G. H. Bolt (Netherlands), Dr. I. P. Guerassimov (U.S.S.R.), Dr. M. L. Jackson (U.S.A.), Dr. T. J. Marshall (Australia), the Secretary-General acting as the Secretary. This Committee will look at the following questions:

1. Frequency of holding congresses.
2. Publication of Proceedings.
3. Commission Meetings and Joint Commission Meetings between Congresses.

As the ensuing deliberations may lead to the necessity of changing the Rules it was decided that the ad-hoc Committee be as from now on a standing Committee on Rules consisting of J. P. Guerassimov (U.S.S.R.), E. Mückenhausen (W.Germany), E. W. Russell (U.K.), R. Tavernier (Belgium) and F. A. van Baren (Secretary-General).

b) 50th Anniversary

The Council decided that the 50th Anniversary of the Society, which was founded in 1924, be celebrated in 1974. A special Jubilee Committee will be set up consisting of representatives of Australia, France, Germany, India, Italy, Japan, Scandinavia, U.S.A. and the U.S.S.R. The Secretary-General shall be Secretary of this Committee.

2. The invitation of the All-Union Soil Science Society of the U.S.S.R. to hold the next Congress in their country was accepted. Following the decision that a Jubilee Session was to be organized in 1974, and being un-inclined to hold too numerous international meetings, it was decided that the 10th International Congress of Soil Science be held in 1974 in the U.S.S.R. and that at that occasion due attention should be paid to the 50th anniversary.

3. Upon recommendation of Academician Guerassimov, leader of the U.S.S.R.-delegation the Council nominated Dr. V. Kovda as President of the I.S.S.S. and Dr. I. P. Guerassimov as Vice-President. Dr. F. A. van Baren was re-elected as Secretary-General, and Dr. P. Buringh (Netherlands) was nominated as his Deputy.

4. Upon request of the President the Secretary-General reads the names of the members who have been nominated as Officers of the Society.

Commission I	Chairman :	W. Gardner	(U.S.A.)
	Past-Chairman:	G. H. Bolt	(Netherlands)
	Vice-Chairmen:	M. Kutilek	(Czechoslovakia)
		K. H. Hartge	(W.Germany)
Commission II	Chairman :	H. Laudelout	(Belgium)
	Past-Chairman:	J. M. M. J. Fripiat	(Belgium)
	Vice-Chairmen:	K. Wada	(Japan)
		G. Pedro	(France)
Commission III	Chairman :	Fahreaus	(Sweden)
	Past-Chairman:	J. Macura	(Czechoslovakia)
	Vice-Chairmen:	M. Alexander	(U.S.A.)
		Phillipson	(U.K.)
Commission IV	Chairman :	O. T. Rotini	(Italy)
	Past-Chairman:	Y. Ishizuka	(Japan)
	Vice-Chairmen:	C. H. Williams	(Australia)
		N. H. Miller	(Canada)
Commission V	Chairman :	R. Dudal	(Italy)
	Vice-Chairmen:	V. A. Kovda	(U.S.S.R.)
		E. Schlichting	(W.Germany)
	Past-Chairman:	N. Florea	(Rumania)

Commission VI	Chairman	:	T. J. Marshall	(Australia)
	Past-Chairman:		I. D. Staicu	(Rumania)
	Vice-Chairmen:		E. W. Russell	(U.K.)
			J. S. Kanwar	(India)
Commission VII	Chairman	:	K. Norrish	(Australia)
	Past-Chairman:		B. Mitchell	(U.K.)
	Vice-Chairmen:		U. Schwertmann	(W.Germany)
			A. D. Scott	(U.S.A.)

5. Communications

Article 1—7 of the Rules provides that the Commissions with the approval of the Council may hold special meetings between Congresses. It thus is approved that:

- A meeting of Commission IV be held in 1970 in New Delhi, India, on Soil Fertility Evaluation and Fertilizer Use under Tropical and Sub-Tropical Conditions. It was felt that Paddy-Soils might be included in which case Commission V could conjointly meet.
- A meeting of Commissions V and VI be held in 1970 with as the main topic: Pseudo-gley genesis, classification, meliozation and cultivation. Place and time later to be determined.
- If possible, a joint inter-congress meeting be held of Commissions II, III, IV and VI on "Effect of Soil Factors on Crop Production". Place and time later to be determined.

The Council further approved that the INQUA-Commission on Paleopedology be *informed of I.S.S.S.'s interest in this subject and its willingness to cooperate through Commission V.*

Apart from the decision taken where the 1974 Jubilee Congress and Commission Meetings are to be organized in the intervening period, the suggestion of Dr. Tavernier to study the possibility of organizing the next Congress in 1971 in one of the European countries, met with the approval of the Council. It indeed was felt that an interval of six years between international congresses might not be in the Society's interest.

6. Honorary Members

The Society conferred Honorary Membership upon the following distinguished Soil Scientists:

Professor F. Hardy, C.B.E., M.A., Dip. Agric (Cantab). Born 1893, Professor Hardy only recently retired from work, well over the age of 75. He is one of the few soil scientists who devoted their whole active to the study of tropical soils. His "Studies in West Indian Soils" of which 13 were published between 1922 and 1947 are proof of his outstanding ability. Indeed he laid the foundation for the surveys carried out since he left the Imperial College of Tropical Agriculture at Trinidad in 1956. He also has long been recognized as a leading authority on cocoa soils and the nutrition and environment of the cocoa tree. Professor Hardy also turned his hand to the more fundamental aspects of pedology as final proof in the many papers on the subject of which the "Studies in tropical soils" specifically drew the attention of the students in tropical soil science.

Professor Dr. Dr. W. L. Kubierna. Born June 30, 1897. Dr. Kubierna who can look back on a splendid career as a soil scientist and notably as the creator of new specialised discipline "Micro-morphology", in which he still is active. In 1937 his "micro-pedology" containing the lectures held in Ames, Iowa, U.S.A., reflected the dynamic approach to soil morphological problems based on the microscopic study of soil fabrics. Since this discipline drew world wide interest, Dr. Kubierna travelled all over the world an held lectures in many countries thus putting his brilliant mark on the development of soil science.

Well-known textbooks are: Die Entwicklungslehre des Bodens (Wien, 1938), The Soils of Europe (London, 1953), where Dr. Kubierna wrote numerous papers on allied subjects. He is Honorary Member of the Spanish Research Council, Member of the Spanish Academy of Science, of the German Academy of Research-Workers and Honorary Member of the German Society of Soil Science.

Dr. L. A. Richards. Born April 24, 1904. A research physicist by training and profession, he started his career with the famous Salinity Laboratory at Riverside in 1939 and since then devoted his full time and energy to the study of desert and semi-desert soils. His fame was internationally established as the editor of the textbook widely known and used as Handbook 60: Diagnosis and Improvement of Saline and Alkali Soils. Many awards have been bestowed upon Dr. Richards e.g. The Presidential Certificate of Merit, 1948. Stevenson Award, 1949. Superior Service Award Department of Agriculture, 1959. He was general lecturer at both the 4th and the 7th International Congress of Soil Science in respectively Amsterdam, 1950 and Madison, Wisconsin, 1960. In 1965 he was nominated President of the American Society of Agronomy. He is the author of numerous research papers and of sections of scientific textbooks. His contributions to the knowledge of arid and semi-arid regions are of outstanding value, soil scientists and agronomists alike.

Professor Dr. A. A. Rode. Born April 21, 1896. Dr. Rode is one of the most outstanding pedologists of the U.S.S.R. He is author of over 180 papers and textbooks, all dealing with various problems of soil science. In 1937 the important 454 pages counting monograph "Podzol-forming process" was published in Moscow. Theoretical problems of soil development in relation to time were discussed in the volume: Soil Forming Processes and Evolution of Soils (1947). His specialized interest in water-relationship found expression in five books published in the period 1952—1965, in all no less than 1633 pages of text. The manual Soil Science published in English in 1962 contributed to a world wide appreciation of his talented describing the soils of the U.S.S.R., their genesis, properties and distribution. The U.S.S.R. Academy of Sciences awarded him the Dokuchaev Gold Medal, the highest award to be bestowed on a pedologist. Devoteness to science, broad approach to research work, vast erudition and a marvellous capacity for work, these are some characteristics of Professor Aleksay Andreevich Rode.

Resolutions

The following resolutions were adopted:

The members of the International Society of Soil Science assembled in Adelaide in the meeting of Tuesday, August 13th, 1968, on the FAO/UNESCO Soil Map of the World wish to express their great appreciation to FAO and UNESCO for the outstanding work carried out until now in the implementation of the Project, and more particularly to the officers concerned as well as to those who helped to prepare the draft for the various continents, and to the about 300 colleagues all over the world who directly participated, for the valid contributions which altogether cumulated in this historical event, that the first well-founded Soil Map of the World is being presented to international soil science.

Being impressed by this work and realising its outstanding value for scientists, teachers or students, they urgently request the responsible authorities of the two United Nations Agencies concerned, that the Soil Map of the World be made available in print form, including a reliability map, together with explanatory text, with the least possible delay, and in any case before the 10th International Congress of Soil Science.

The members present understand that improvements based on additional field survey data still may have to be included before the final printing. They, however, strongly feel that this should not prevent the maps from being published before the next Congress.

The International Society of Soil Science, assembled in a general meeting on August 15th, 1968, in Adelaide, South Australia, expresses its warm thanks to the Commonwealth Government of Australia, and especially to His Excellency, The Rt. Hon. Lord Casey, The Governor-General, who honoured us by opening the Congress, to all the State Governments, specifically of South Australia, and to Adelaide City Authorities, for their keen interest in the 9th International Congress. The International Society of Soil Science particularly expresses its appreciation to the University of Adelaide, to the C.S.I.R.O., and last but not least to the Australian Society of Soil Science for their lasting and indispensable support.

Among the many who deserve to be mentioned by name only one may be selected to be thanked most heartily for his efforts and achievements, Mr. T. B. Paltridge, Congress Manager of outstanding ability.

In him we honour all who by their efficient assistance made this 9th Congress such a great success.

Votes of thanks

Votes of thanks were formulated by representatives from Asia (Dr. Kawaguchi, Japan), Europe (Dr. Pedro, France), Africa (Dr. Obeng, Ghana) and the Americas (Professor Low, U.S.A.).

The resolutions and votes of thanks carried with acclamation by the Meeting.

Address of out-going President, Dr. E. G. Hallsworth

My task has now almost come to a close. The holding of a Soil Science Congress provides a challenge, and an opportunity to the country which undertakes it. It required us in Australia to take stock of our resources, both of people and of our soils. We needed to assess our human resources in order that we could distribute them to make the best use possible of them in organising this Congress to your satisfaction. We needed to assess what we knew of our soils, both to design the most interesting tours, and to obtain the greater benefit from discussions with our visitors.

The former provides an opportunity, with the Congress as the focal point, for the members of the different organisations concerned with soils in Australia, and especially in South Australia, to get to know each other better. The experience we have had, in which officers of C.S.I.R.O., University and South Australian Department of Agriculture have worked together harmoniously as one team, cannot fail to have a good effect on relations between these groups in the future. The Congress also provides us with opportunities to meet and to get to know our colleagues in other lands. The friendships that follow from these meetings are the very fabric of which our Society is made, and which have enabled it to continue through the difficult times of the past.

On the second challenge, it is one of the virtues of our system of holding each successive Congress in a different country that it gives to all the participants a better conspectus of the problems of soil science. Soils, as we have realised for a long time, are the results of many processes, not all of which have operated on every soil or in every country. The wider our acquaintance with the soils of the world, the more likely are we to be able to see the effect of these various processes, for one will be emphasised in one environment and another in another. The soils of the world, in all their variety, and the differing problems that arise in their utilisation, are laid out for study like a vast book, for those who have the opportunity to see, and the eyes to read it.

Holding the Congress in Australia has given us the opportunity to show our overseas visitors something of the pages of that book that deal with Australia. If you can help us to read them, we shall all get a clearer understanding of what is written therein, to the benefit of Soil Science both in Australia and elsewhere throughout the world.

In a moment I shall ask the President for the 1974 meeting, Professor V. A. Kovda, to take the floor, and subsequently ask His Excellency, the Lieutenant-Governor of South Australia, Sir Mellis Napier, to bring our proceedings to a close. Before I do I would like to thank all my colleagues who have assisted in this undertaking, for their very loyal support, particularly our Congress Manager, Mr. T. B. Paltridge. Everyone of them performed the various tasks I asked of them in a manner better than I had any right to anticipate. From wherever they come — C.S.I.R.O., Department of Agriculture, or University — they formed a team it was a joy and an honour to lead. I would also like to thank our Secretary-General, Dr. F. A. van Baren, for his help and guidance from afar, and also during the period of this Congress.

It is with pleasure that I now hand over my office to Professor Kovda.

Address of President-elect Professor Dr. V. A. Kovda

I would like to express, and I am looking for appropriate translation of my Russian thinking, the deepest gratitude to members of the Congress for acceptance of the invitation of the Academy of Sciences of the U.S.S.R. and the National Society Soil Science Society to convene the next Congress in 1974 in the U.S.S.R. Many thanks for your confidence.

The second, personally and from the members of our group, my personal gratitude for electing me as President of the I.S.S.S. This is an outstanding honour

for my country, for my colleagues, and for me personally. I do remember the names of our Past-Presidents and it is an extremely great honour to be elected.

Finally, we Soviet members of this Congress, would like particularly to thank the Australian Government, the Preparatory Committee and the Soil Science Society of Australia who have prepared this admirable Congress, and who charge us now to at least keep this high level of organisation and conducting this enterprise. In our National Soil Science Magazine, we publish a special article devoted to this Congress.

We knew of the ability of the Australian nation, and we knew many Australian colleagues, we knew President for many years since he has been in Moscow. We are in touch with many of you through mutual interests and visits.

As Vice-President of Commission V, I would stress the particular importance of the World Soil Map Project initiated 8 years ago after the Madison Congress, and presented at this Congress. This is the first agreement and mutual understanding.

This is the beginning of a new era in international communications of soil scientists. It is the beginning of a new stage in progress of revolution of the science of pedology.

You are awaiting some comments from me relating to the 10th Congress.

The programme and the tools we have discussed before we issued the invitation.

In a year's discussions and calculations with my friend, Gerasimov, Vice-President, we have tentative ideas of how to outline the main programme. We think the opening of the Congress must be in Moscow — probably in the new building of the Moscow University. The working sessions of the Congress will be in the auditorium of the Moscow University and in the Academy of Sciences.

The important objectives of the programme.

I think that all aspects of experimental pedology deserve to be inserted into a part of our programme. Chemical side of pedogenesis, distribution of soil forming products.

Food problem. Problems of overcoming the deficit of food. It seems to us a matter of productivity and growth. Soil fertility and the effectiveness of our work probably must be the soil component of the future programme.

No Congress is without tours, and the tours in Australia are magnificent. We will look for the equivalents in our programme before and after the sessions of the 10th Congress. Probably, the Russians might organise the tours starting from Moscow, going north and following through central and south eastern areas of Russia. Floating symposia showing chemical aspects of different soil landscapes in different places. We would like to show Siberia. I have now tentative agreement with members of our group that we could have symposia and excursions to an area of Western Siberia.

We will combine part of specialist symposia with tours in order to obtain the scientific results and to discuss results on tour as we leave the area. So to have a specialist symposium distributed in different parts of Soviet union and connected with local impressions of soils and agriculture.

We shall give special consideration to the Jubilee Celebrations to be a part of the 10th Congress. I would suggest exporting Australian personnel to assist in this Congress.

Many thanks.

Closing of the 9th Congress by the Lt. Governor of South Australia Sir Mellis Napier:

Closing address

The time has come to bring your proceedings to a close, but, before we part, I would ask you to bear with me, whilst I say a few words by way of conclusion.

It is in the nature of things that we have to live in the present, that is, in the few moments of time, which the conscious mind is able to span, looking back over the past, from which we draw our knowledge and experience, whilst we peer, as it were, into a future which we can only visualize or imagine.

Looking back in this way, it seems to me that I can see how it has come to pass that Adelaide should have been chosen as the centre of soil science and research in Australia, and, as such, as a suitable site or venue for your meeting.

I remember Adelaide at the turn of the century, in the year 1898, when South Australia was essentially a rural community, living close to the soil and on the products of the land.

Compared to the colonies to the East, it was a poor country. Less than one-fifth of the area has a rainfall of more than 10 inches annually, and, in its natural state, the soil was, speaking generally, of low fertility. The early settlers had had a hard time, but, by industry and ingenuity, they had succeeded in earning a living from the land. The development of the stripper by Ridley and Bull, and of the stump jump plough, had made possible the cultivation of wide areas of mallee country, which could not otherwise have been cultivated, and, as we can see now, a new era was at hand — the Age of Science.

The last decade of the 19th century was certainly a time of discovery and invention. As a boy I had seen the advent of the motor car, and, indeed, of the internal combustion engine, which was to make possible the conquest of the air. In 1895 Roentgen had discovered "X-rays", and the Curies were on the point of discovering radium.

But, when we are speaking of Australia and soil research, it seems to me that the impact of science on our economy was first felt when superphosphate came into use as a fertilizer of poor soil. Beginning with the wheat fields on Yorke Peninsula, the use spread rapidly to the vineyards, orchards, gardens, and ultimately to the pastures of South Australia, bringing about the transformation to our pleasant countryside, very much as you have seen it.

I have no doubt that the average citizen was prepared to take this innovation more or less as a matter of course, but there were others with imagination, and to them it was an object lesson in the possibilities that soil science and research might open to a rural community. I think that this was the idea, which prompted the late Mr. Peter Waite to make the munificent gift, which enabled the University of Adelaide to establish the Waite Agricultural Research Institute. Later when the C.S.I.R.O. was set up, the Division of Soils was established with its headquarters at the Waite Institute, and since 1929 the close relationship between these two organisations has continued.

In the first instance I think that the Waite Institute was mainly concerned with pasture improvement. In about 1890, Mr. A. W. Howard of Mt. Barker had discovered the possibilities of subterranean clover, as an aid to rebuilding the fertility of our soils, but it was, I think, the Waite Institute that first demonstrated the value of a balanced pasture.

Since then, I think that the interest of the two organisations has been largely directed to, what is — after all — the proper subject of research, namely, the reason why things are as they are and act as they do. In the result, a deal of knowledge has been gained with respect to the significance of, what we now call, "trace element deficiencies".

The first discovery of this sort was in relation to the "grey speck" disease in oats, which, in 1928, was shown by the Waite Institute to be due to manganese deficiency. This has led to a study of the "manganese status" in different soils, and in relation to other crops, throughout Australia.

Since then officers of the C.S.I.R.O., and of the Waite Institute, and of the Department of Agriculture, have made very substantial contributions to the knowledge of trace elements in S.A., and elsewhere in Australia and overseas. A spectacular illustration, of what this knowledge can lead to, is the taming of what used to be known as "the ninety mile desert", that is the area between the neighbourhood of the River Murray and the border of Victoria. What was once regarded as "desert" is rapidly turning to pasture, adding a new province to South Australia.

Another triumph of the C.S.I.R.O. has been the discovery of the cause and cure of "coast disease" in sheep. This is now known to be due to deficiency of copper and cobalt in the diet, and this discovery has clarified the role of cobalt. It has suggested a method of preventing "phalaris staggers", that is, a condition akin to poisoning following a diet of phalaris, which is generally a valuable fodder plant. The use of the "cobalt bullet" for the treatment of sheep in cobalt deficient areas is now, I believe, World wide.

In or about 1944, following reports of "steely" or "stringy" wool in W.A., scientists of the C.S.I.R.O. were able to demonstrate that this condition was due to copper deficiency.

As the result of research by the C.S.I.R.O., and the Waite Institute, the essential role of molybdenum in the nodulation of clovers has been ascertained, permitting pastures to be established on formerly difficult soils in S.A. and elsewhere.

As the result of experiments in the River Murray Irrigation Area, by the Department of Agriculture, it has been found that a disease of citrus trees known as "Mottle Leaf" is due to zinc deficiency, and, since then, zinc deficiency has been discovered in many crops and in other parts of Australia.

In recent years the essential role of cobalt in the nitrogen fixation by legumes has been demonstrated, and this discovery has enabled the establishment of lucerne pastures on dry sandy soils which had hitherto been regarded as of little value.

Ladies and Gentlemen, I can make no pretence to be anything but an onlooker, albeit an interested onlooker, in the affairs which hold your interest, and, as such, my primary concern has been with what South Australians have contributed to the researches of which I speak; but I confess that, having been privileged to see the exhibition prepared for your Congress, my eyes have been opened to the fact that the problems with which you have to deal are far wider and more varied than I, as a mere onlooker, should ever have imagined.

And, be that as it may, it is obvious that, in the years ahead, there will be the need for every effort that science can make to conserve and implement the food resources of the World. It is a challenge that I am sure you will appreciate and answer. I wish you God speed in all your endeavours.

Now, before I close, may I speak for the State and people of S.A., and offer to all of you, who come from other States or countries, a hearty greeting and welcome to S.A. In wishing you a safe and sure return to your native homes, may I express the hope that you will leave Adelaide and South Australia feeling that your visit has been well worthwhile, and of that I feel no doubt. It seems to me that you cannot have failed to profit by the exchange of views and opinions, but, apart from that, I hope that you will take with you some happy memories of S.A. and its people, and, as it may be, of some of its products.

LE 9e CONGRÈS INTERNATIONAL DE LA SCIENCE DU SOL

Ce Congrès a vraiment été exceptionnel du point de vue niveau scientifique comme du point de vue organisation.

Comme cela a été mentionné dans le Bulletin no 32, le Comité Organisateur, avec l'appui d'un conseil élargi a publié les communications, limitées à 310 mais toutes imprimées dans les comptes-rendus groupés en 4 volumes très bien édités. Ces comptes-rendus ont été présentés aux participants lors de leur arrivée. Ce nombre limité de communications a permis de respecter scrupuleusement le temps imparti et chacun s'y est conformé. Aucun document non annoncé n'a été admis et, pour ce qui est des communications des auteurs absents (et ils étaient trop nombreux), on a simplement lu le résumé. La traduction simultanée multilingue fut pratiquement parfaite. On doit des remerciements aux 18 interprètes non professionnels qui ont été soumis à un entraînement sévère pendant 6 mois et aux 9 interprètes professionnels. Nous devons également signaler la magnifique exposition pédologique qui a attiré l'attention d'un nombreux public.

Le choix des excursions faites avant et après le Congrès était tellement varié que chaque membre étranger a pu se rendre compte des sols du vaste continent australien. Nous devons remercier spécialement le Dr Gordon Hallsworth qui est maintenant ancien Président et Madame Hallsworth qui ont été les hôtes charmants de nombreux visiteurs étrangers à de multiples occasions, au Manager du Congrès Mr T. Paltridge, au Dr J. W. Holmes, Président du comité d'édition et à Mr C. S. Welsh qui fut le responsable de l'organisation de la traduction simultanée.

Le Congrès a été suivi par 865 participants, représentant 52 pays qui sont:

Afrique Occ. Port.	2	Grèce	2	Pakistan	1
Allemagne de l'Est	2	Hongrie	1	Pays-Bas	8
Allemagne de l'Ouest	10	Iles Solomon	2	Perou	1
Argentine	1	Inde	5	Philippines	5
Australie	490	Indes Occidentales	1	Pologne	1
Autriche	1	Indonesie	1	Portugal	5
Belgique	5	Iran	1	Rep. Sud-Africaine	2
Bresil	1	Israel	3	Rhodesie	1
Canada	28	Italie	7	Roumanie	3
Cuba	3	Japon	12	Royaume Uni	30
Danemark	2	Kenya	1	Suede	4
Espagne	4	Malawi	1	Taiwan	1
Etats-Unis	118	Malaya	7	Tchad	1
Fiji	1	Maroc	1	Tchécoslovaquie	4
Finlande	1	Norvege	1	U.A.R.	2
France	8	Nouvelle Calédonie	1	U.R.S.S.	23
Ghana	2	Nouvelle Zelande	44	Venezuela	2
		Ouganda	1		

En ce qui concerne les thèmes du Congrès, on peut se rapporter au Bulletin 32, 1968, dans lequel ils ont été explicités clairement.

770 membres qui ont pris part aux excursions avant et après Congrès.

L'Association a été grandement honorée par le fait que le Gouverneur Général de l'Australie, Son Excellence le Rt Hon. Lord Casey, PC, GCMG, CH, DSO, MC, KStJ, a montré l'intérêt qu'il nous portait en nous adressant quelques mots à la session d'ouverture.

Le mardi 6 août 1968, à 11 h 30, environ 1.200 personnes se pressaient dans le Bonyhon Hall de l'Université d'Adélaïde pour prendre part à la session d'ouverture du 9e Congrès International de la Science du Sol.

Le déroulement des travaux s'est fait comme suit:

1. Ouverture du Congrès.
2. Adresse de Son Excellence le Gouverneur Général de l'Australie.
3. Ouverture de l'Assemblée Générale et de la session de travail par le Président Hallsworth.
4. Rapport de Secrétaire Général et Trésorier de l'Association.
5. Rapport concernant les nouveaux statuts.
6. Divers.

1-4: Le Président de l'Association ouvre le Congrès et annonce qu'il sera honoré de la présence de Son Excellence le Gouverneur Général de l'Australie qui prononce immédiatement quelques paroles de bienvenue.

Ensuite, le Président prononce son discours d'ouverture (voir le texte anglais) puis demande alors au Secrétaire Général et Trésorier de la Société de lire son rapport.

Rapport du Secrétaire général

Membres

Le nombre de membres se maintient à un niveau constant. Au 1er juin 1968, 4440 membres étaient inscrits, représentant 93 pays alors qu'au 1er juin 1964, ils étaient 4437 représentant 91 pays. Il semble que la perte initiale due à l'augmentation de la cotisation soit entièrement compensée par de nouvelles inscriptions.

La liste alphabétique suivante des pays montre la situation actuelle comparée à celle du 1er juin 1964.

	1-6-'64	1-6-'68		1-6-'64	1-6-'68
Afghanistan	—	1	Jugoslavie	40	41
Algérie	—	1	Kenya	6	4
Argentine	174	208	Liban	6	5
Australie	102	319	Libye	1	—
Autriche	84	80	Luxembourg	2	2
Belgique	172	117	Madagascar	4	—
Bolivia	1	1	Maroc	4	5
Bresil	33	25	Mexique	51	38
Bulgarie	39	32	Nepal	1	1
Burma	3	1	Nicaragua	—	—
Cambodia	—	1	Nigerie	6	14
Cameroun	4	3	Norvege	6	5
Canada	207	212	Nouvelle Zelande	279	130
Ceylan	2	6	Ouganda	4	9
Chili	2	4	Pakistan	10	12
Chine	1	1	Paraguay	1	1
Colombie	10	7	Pays-Bas	109	103
Congo	1	2	Perou	3	15
Coree	3	2	Philippines	13	14
Costa Rica	3	12	Pologne	49	37
Cote d'Ivoire	1	1	Portugal	89	99
Cuba	1	1	Rep. Dém. Allemagne	73	73
Cyprus	2	2	Rep. Féd. Allemagne	136	154
Dahomey	1	—	Rep. Dominicaine	—	1
Danemark	66	63	Rep. Sud-Africaine	69	112
Ecuador	3	3	Rhodesie	4	10
El Salvador	1	1	Roumanie	77	111
Espagne	104	79	Royaume Uni	232	280
Etats Unis	1239	967	Senegal	1	11
Ethiopie	1	—	Sierra Leone	—	2
Fed. de Malaisie	9	7	Singapore	—	1
Finlande	19	26	Soudan	10	13
France	81	70	Suede	60	78
Ghana	10	28	Suisse	17	16
Grece	6	12	Surinam	2	3
Guatemala	3	4	Swaziland	—	3
Guyane Anglaise	3	—	Syrie	3	3
Haiti	—	1	Tanzania	1	2
Honduras	3	1	Tchécoslovaquie	21	35
Hongrie	37	37	Thailande	2	11
Inde	71	62	Togo	1	1
Indonesie	3	6	Trinidad	6	6
Iran	5	20	Tunisie	3	7
Iraq	5	5	Turquie	10	8
Irlande	54	31	U.A.R.	66	39
Islande	2	2	U.R.S.S.	82	82
Israel	126	67	Uruguay	1	2
Italie	78	195	Venezuela	9	11
Jamaica	4	1	Vietnam	2	—
Japon	79	89	Zambia	4	3

Pour la période 1964—1968 nous déplorons à nouveau la perte d'un certain nombre de collègues. Des notices nécrologiques ont paru dans notre bulletin mais nous désirons mentionner encore une fois les décès suivants:

- 1964 — Herbert Greene (G.B.); G. Bertrand (France), membre honoraire.
- 1965 — J. V. Botelho da Costa (Portugal); W. Gardner (USA); I. N. Antipov-Karataev (URSS), membre de l'Académie; W. P. Kelly (USA), membre honoraire.
- 1966 — Sir E. John Russell (G.B.); J. K. Dixon (Nouvelle Zélande); J. M. Albareda (Espagne); A. Musierowicz (Pologne); V. Novak (Tchécoslovaquie).
- 1967 — J. Hudig (Hollande); N. Cernescu (Roumanie), ancien Président; Sterling A. Taylor (USA).
- 1968 — H. Gisin (Autriche); E. Protopopescu-Pake (Roumanie); Th. Sidel (Roumanie); Sh. Ionescu-Sisesti (Roumanie); J. Tomaszewski (Pologne); Mme Jadwiga M. Ziemiacka (Pologne).

Pendant le Congrès, nous a été communiquée la triste nouvelle de la mort du Professeur Mircea Popovatz (Roumanie) et du Professeur Prattolongo (Italie). Tous ces collègues défunts ont consacré leur temps et leur énergie à la science du sol. Gardons leur mémoire en haute estime.

Réunions des Commissions de l'A.I.S.S.

Les Commissions II et IV se sont réunies à Aberdeen, Ecosse, du 5 au 10 septembre 1966 et ont été suivies d'une excursion.

La Commission III a organisé une conférence sur la „Dynamique de l'écologie du sol" à Braunschweig-Volkenrode (Allemagne de l'Ouest) du 5 au 10 septembre 1966. La Commission V a tenu une réunion sur les sols méditerranéens à Madrid (Espagne) du 12 au 18 septembre 1966. Une excursion au Maroc a précédé la conférence qui a été suivie d'une excursion à travers le sud de l'Espagne et le Portugal.

Des commentaires concernant ces activités ont été publiés dans différents Bulletins.

Contacts internationaux

Notre Association a été représentée par les Dr Tamm et Odin (Suède) à la 4ème session de la Commission de Climatologie (CCI) à Stockholm du 12 au 26 août 1965. Notre ancien Président le Dr R. Bradfield a représenté l'A.I.S.S. à la réunion de la Commission pour la Climatologie Agricole à Manille (Philippines) du 15 au 29 novembre 1967.

Le Secrétaire Général a assisté à différentes réunions sur le Projet de carte mondiale des sols à Rome (1965, 1967, 1968) et Moscou (1966).

Il a participé aux activités de l'UNESCO sur les sols salins à Budapest (1967) et en Yougoslavie (1968) et a représenté l'Association à une réunion de la Commission Internationale de rural à Paris (1966).

Sociétés nationales

Depuis 1964, deux nouvelles sociétés ont été fondées: la Société Colombienne de la Science du Sol et la Société de la Science du Sol de la République Démocratique Allemande, les deux en 1967.

Travail du secrétariat

Du 1er août 1964 au 24 juillet 1968, 3.738 lettres ont été reçues et 2938 ont été envoyées. Ont été également expédiés, 37.882 exemplaires du Bulletin et 4.758 exemplaires des Statuts. 64 revues de livres ont été publiées. La vente de 385 exemplaires du Dictionnaire de la Science du Sol, 650 exemplaires des Soil Color Charts japonais et 64 exemplaires de la micromorphologie des sols a été assurée par le Bureau d'Amsterdam.

Rapport du Trésorier

Le bilan suivant des entrées et sorties a été présenté pour être approuvé à l'Assemblée Générale.

Entrées		Sorties	
Cotisations	f 85.534,76	Achat de titres	f 16.765,32
Dépôts	„ 2.290,50	Frais d'impression	„ 24.702,98
Intérêts	„ 2.737,96	Timbres, etc.	„ 22.112,17
Charts, dictionnaires	„ 15.769,78	Secrétariat	„ 18.237,50
Balance	„ 3.183,78	Frais de voyages	„ 6.604,71
		Charts, dictionnaires	„ 13.822,64
		Divers	„ 1.592,96
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	f 103.848,28		f 103.848,28

Le rapport détaillé a été examiné par un expert officiel et a été soumis à l'inspection d'un comité nommé par le Conseil.

Celui-ci comprenait le Dr M. Fieldes (Nouvelle Zélande) et le Dr H. B. Obeng (Ghana). Le Dr Fieldes a estimé que le Comité avait trouvé l'administration du Trésorier en bon ordre et a proposé que le rapport financier soit accepté.

L'Assemblée Générale a alors approuvé le rapport du Secrétaire Général et Trésorier. Le Président a remercié le Dr F. A. van Baren pour la manière dont il a conduit les intérêts de la Société.

5. Nouveaux statuts

Les nouveaux statuts envoyés sous forme provisoire à tous les membres ont été adoptés après quelques changements mineurs.

Paragraphe H.I.C. changé. Il faut lire:

Pas plus de 6 représentants des membres qui résident dans des pays n'ayant pas de société nationale, pourvu qu'il y ait au moins 20 membres de l'AISS pour chaque représentant.

Paragraphe I.10 changé. Il faut lire:

Un membre ne peut être simultanément membre de plusieurs Commissions ou Sous-Commissions.

Paragraphe M.3 changé. Il faut lire:

Le Président et le Secrétaire Général de l'Association peuvent d'un commun accord nommer un ou plusieurs membres pour représenter l'Association à des réunions d'autres sociétés ou à des conférences aux cours desquelles des sujets intéressant l'Association sont discutés.

La seconde réunion de l'Assemblée a eu lieu le mardi 15 août avant midi et avait à l'ordre du jour les points suivants:

1. Ouverture.
2. Futur Congrès.
3. Election des membres du Comité Exécutif.
4. Dirigeants des Commissions de la Société.
5. Communications.
6. Membres honoraires.
7. Résolutions.
8. Allocution du Président sortant.
9. Allocution du Vice-Président nouvellement élu.
10. Clôture du Congrès par le Lt Gouverneur de l'Australie du Sud, Sir Mellis Napier.

1. Le Président ouvre la séance et signale que le Conseil a prévu 3 sessions pour discuter de l'Association en ce qui concerne l'article H.2 des statuts Deux paragraphes d'intérêt général doivent être mentionnés.

a) Congrès futurs

Les conséquences financières de l'organisation d'un Congrès, comportant les frais d'impression des comptes-rendus et la traduction simultanée ont été étudiées par un comité ad hoc constitué des membres suivants: Professeur J. P. Quirk (Australie), Président, Dr G. H. Bolt (Hollande), Dr I. D. Staicu (Roumanie) et Dr H. B. Obeng (Ghana).

Après avoir épuisé le sujet, le Conseil a décidé qu'un comité de travail devait être constitué et comprendrait les membres suivants: Dr E. Schlichting (Allemagne de l'Ouest), qui convoquera les membres, Dr G. H. Bolt (Pays-Bas), Dr I. P. Gerasimov (URSS), Dr M. L. Jackson (USA), Dr T. J. Marshall (Australie), le Secrétaire Général agissant comme secrétaire. Le Comité s'occupera des points suivant:

1. Fréquence des congrès à tenir.
2. Publication des comptes-rendus.
3. Réunions de Commissions et réunions conjointes de Commissions entre les Congrès.

Comme les délibérations qui ont suivi ont conduit à la nécessité de changer les statuts, il a été décidé que le Comité ad hoc serait dès à présent un Comité qui établirait les statuts et serait constitué de J. P. Gerasimov (URSS), E. Mückenhausen (Allemagne de l'Ouest), E. W. Russell (G.B.), R. Tavernier (Belgique) et F. A. van Baren (Secrétaire Général).

b) 50ème anniversaire

Le Conseil a décidé que le 50ème anniversaire de l'Association qui a été fondée en 1924 serait célébré en 1974. Un comité spécial du Jubilé doit être constitué comprenant des membres d'Australie, France, Allemagne, Indes, Italie, Japon, Scandinavie, USA et URSS. Le Secrétaire Général sera le secrétaire de ce comité.

2. L'invitation de la Société de la Science du Sol de l'URSS de tenir le prochain congrès dans son pays a été acceptée. Après avoir décidé que la session du Jubilé devait être organisée en 1974, et comme on ne désirait pas tenir de réunions internationales trop souvent, il a été décidé que le 10ème Congrès International de la Science du Sol se tiendrait en 1974 en URSS et que, à cette occasion, il faudrait prévoir le 50ème anniversaire.

3. Sur recommandation de l'Académicien Gerasimov, Chef de la délégation de l'URSS, le Conseil a nommé le Dr V. Kovda, Président de l'AISS, et le Dr I. R. Gerasimov, Vice-Président. Le Dr F. A. van Baren a été réélu Secrétaire Général et le Dr P. Buringh (Hollande) a été nommé son délégué.

4. A la demande du Président, le Secrétaire Général lit les noms des membres qui ont été nommés dirigeants de l'Association.

Commission I	Président	:	W. Gardner	(Etats-Unis)
	Ancien Président:		G. H. Bolt	(Pays-Bas)
	Vice-Présidents :		M. Kutilek	(Tchécoslovaquie)
			K. H. Hartge	(Allemagne de l'Ouest)
Commission II	Président	:	H. Laudelout	(Belgique)
	Ancien Président:		J. M. M. J. Fripiat	(Belgique)
	Vice-Présidents :		K. Wada	(Japon)
			G. Pedro	(France)
Commission III	Président	:	G. Fahreaus	(Suède)
	Ancien Président:		J. Macura	(Tchécoslovaquie)
	Vice-Présidents :		M. Alexander	(Etats-Unis)
			U. K. Phillipson	(Royaume Uni)
Commission IV	Président	:	O. T. Rotini	(Italie)
	Ancien Président:		Y. Ishizuka	(Japon)
	Vice-Présidents :		C. H. Williams	(Australie)
			N. H. Miller	(Canada)
Commission V	Président	:	R. Dudal	(Italie)
	Ancien Président:		V. A. Kovda	(U.R.S.S.)
	Vice-Présidents :		E. Schlichting	(Allemagne de l'Ouest)
			N. Florea	(Roumanie)

Commission VI	Président	:	T. J. Marshall	(Australie)
	Ancien Président:		I. D. Staicu	(Roumanie)
	Vice-Présidents	:	E. W. Russell	(Royaume Uni)
			J. S. Kanwar	(Inde)
Commission VII	Président	:	K. Norrish	(Australie)
	Ancien Président:		B. Mitchell	(Royaume Uni)
	Vice-Présidents	:	U. Schwertmann	(Allemagne de l'Ouest)
			A. D. Scott	(Etats-Unis)

5. Communications

L'article I-7 des statuts prévoit que les Commissions, avec l'accord du Conseil, puissent tenir des réunions spéciales entre les Congrès.

Il est par conséquent décidé que:

a) une réunion de la Commission IV se tiendra en 1970 à New Delhi, Indes, sur l'évaluation de la fertilité des sols et l'utilisation des engrais dans les conditions tropicales et sub-tropicales. On a estimé que les sols des rizières pouvaient être inclus, de sorte que la Commission V pourrait y participer.

b) une réunion des Commissions V et VI se tiendra en 1970 avec comme sujet principal: la genèse du pseudo-gley, sa classification, son amélioration et sa culture. Le lieu et la date seront déterminés plus tard.

c) si possible, une réunion commune rassemblera les Commissions II, III, IV et VI et aura pour objet „l'effet des facteurs du sol sur la production des plantes”. Le lieu et la date seront déterminés plus tard.

Le Conseil a ensuite approuvé que la Commission INQUA sur la paléopédologie soit au courant de l'intérêt que porte l'AISS à ce sujet et de la bonne volonté de coopérer dans le cadre de la Commission V.

En ce qui concerne la décision de tenir le Congrès Jubilaire en 1974 et d'organiser certaines réunions pendant la période intermédiaire, la suggestion du Dr Tavernier d'étudier la possibilité d'organiser le prochain Congrès en 1971 dans un pays européen a rencontré l'approbation du Conseil. On a, en effet, trouvé qu'un intervalle de 6 ans entre deux congrès internationaux pouvait ne pas être intéressant pour la Société.

6. Membres honoraires

L'Association a conféré le titre de membre honoraire aux distingués Pédologues suivants:

Professeur F. Hardy, C.B.E., M.A., Dep. Agric. (Cantab). Né en 1893, le Professeur Hardy a pris sa retraite il y a peu de temps seulement, bien qu'il soit âgé de 75 ans. Il est un des rares pédologues qui consacra toute son activité à l'étude des sols tropicaux. Ses „études des sols de l'Inde Occidentale” dont 13 éditions furent publiées entre 1922 et 1947 sont la preuve de sa capacité exceptionnelle. Il a participé à la mise en route des prospections qui ont été effectuées depuis qu'il a quitté l'Imperial College of Tropical Agriculture de Trinidad en 1956. Il a été également reconnu depuis longtemps comme pionnier des sols à cacaoyers et de la nutrition et de l'environnement de cette culture. Le professeur Hardy s'est aussi occupé d'aspects plus fondamentaux de la pédologie comme le prouvent les nombreux articles sur ce sujet. Ses études sur les sols tropicaux ont attiré l'attention de ceux qui étudient la pédologie tropicale.

Professeur Dr W. L. Kubierna. Né le 30 juin 1897, le Dr Kubierna peut jeter un regard rétrospectif sur sa splendide carrière comme pédologue et notamment comme créateur de la nouvelle discipline spécialisée la „micropédologie” dans laquelle il est d'ailleurs encore actif. En 1937, sous ouvrage „micro-pédologie” rassemblant les leçons qu'il avait données à Ames, Iowa, USA, reflète l'aspect dynamique des problèmes de morphologie du sol basée sur l'étude microscopique des soil fabrics. Depuis lors, cette discipline s'est développée mondialement. Le Dr Kubierna a voyagé à travers le monde et a donné des cours dans de nombreux pays marquant de son empreinte le développement de la science du sol. Ses ouvrages bien connus sont:

Die Entwicklungslehre des Bodens (Vienne, 1938) et The soils of Europe (Londres, 1953). Le Dr Kubiena a écrit de nombreux articles sur des sujets connexes. Il est membre honoraire du Conseil Espagnol de la Recherche, membre de l'Académie des Sciences d'Espagne, de l'Académie Allemande des Chercheurs et membre honoraire de la Société Allemande de la Science du Sol.

Dr L. A. Richards. Né le 24 avril 1904. Physicien chercheur par vocation et profession, il a commencé sa carrière au célèbre Laboratoire de Salinité de Riverside en 1939, et, depuis lors, il a consacré tout son temps et toute son énergie à l'étude des sols désertiques et semi-désertiques. Sa renommée est internationalement reconnue par l'édition d'un ouvrage universellement connu et utilisé comme livre de base: Diagnostic et amélioration des sols salins et à alcalis. De nombreuses distinctions lui ont été octroyées sous le Dr Richards, entre autres, The Presidential Certificate of Merit, 1948, La Stevenson Award, 1949, La Superior Service Award Department of Agriculture, 1959. Il présenta des leçons générales aux 4e et 7e Congrès Internationaux de la Science du Sol respectivement à Amsterdam en 1950 et à Madison, Wisconsin en 1960. En 1965, il fut nommé Président de l'American Society of Agronomy. Il est l'auteur de nombreux articles de recherche et de chapitres inclus dans des ouvrages scientifiques. Sa contribution à la connaissance des régions arides et semi-arides est d'une valeur exceptionnelle pour les pédologues et les agronomes.

Professeur Dr A. A. Rode. Né le 21 avril 1896. Le Dr Rode est un des meilleurs pédologues de l'URSS. Il est l'auteur de plus de 180 articles et livres qui tous se rapportent à des problèmes variés de la science du sol. En 1937, l'importante monographie de 454 pages „Processus de formation des podzols" a été publiée à Moscou. Les problèmes théoriques de développement du sol en fonction du temps furent discutés dans l'ouvrage: Processus de formation et évolution des sols (1947). Il s'est spécialisé dans les relations sol-eau qui font l'objet de 5 livres publiés entre 1952 et 1965 et ne comportant pas moins de 1633 pages. Le manuel de la science du sol publié en anglais en 1962 a contribué à l'appréciation universelle de son talent à décrire les sols de l'URSS, leur genèse, leurs propriétés et leur distribution. L'Académie des Sciences de l'URSS lui a attribué la médaille d'or Dokuchaev, la plus haute distinction jamais octroyée à un pédologue. Dévotion à la science, grande attirance pour le travail de recherche, vaste érudition et magnifique capacité de travail, telles sont quelques unes des caractéristiques du Professeur Aleksay Andreevich Rode.

Résolutions

Les résolutions suivantes ont été adoptées:

Les membres de l'Association Internationale de la Science du Sol réunis à Adélaïde lors de l'Assemblée du mardi 13 août 1968 au sujet de la carte mondiale des sols FAO/UNESCO, ont exprimé leur grand estime pour la FAO et l'UNESCO pour le travail exceptionnel réalisé jusqu'à présent dans l'établissement du Projet et plus particulièrement aux réalisateurs et aux quelques 300 collègues du monde entier qui y ont participé directement. C'est par leur contribution utile qu'ils ont réalisé en commun cet événement historique. Cette première carte mondiale des sols correctement établie a été présentée comme une contribution de la science internationale du Sol.

Impressionnés par ce travail et réalisant sa valeur exceptionnelle pour les scientifiques, les enseignants et les étudiants, les membres demandent aux autorités responsables des deux organismes des Nations-Unies que la carte mondiale des sols soit imprimée et accompagnée d'un texte explicatif dans le délai le plus bref et en tout cas avant le 10e Congrès International de la Science du Sol.

Les membres présents comprennent que des améliorations basées sur des données de prospections complémentaires puissent encore être incluses avant l'impression finale. Cependant, ils espèrent fermement que cela n'empêchera pas que la carte soit publiée avant le prochain Congrès.

L'Association Internationale de la Science du Sol réunie à l'Assemblée Générale du 15 août 1968 à Adélaïde, Australie du Sud, exprime ses remerciements chaleureux au Commonwealth Government d'Australie, et spécialement à Son Excellence Le Rt Hon. Lord Casey, Gouverneur Général qui a honoré notre Association en ouvrant le Congrès, à tous les Gouvernements des Etats et spécialement à celui d'Australie du Sud et aux autorités de la ville d'Adélaïde pour le vif intérêt qu'il au montré au 9e Congrès International. L'Association Internationale de la Science du Sol assure

particulièrement de son estime l'Université d'Adélaïde, le CSIRO et en dernier lieu mais aussi surtout la Société Australienne de la Science du Sol pour leur soutien continu et indispensable. Parmi tous ceux que nous devons mentionner nominale-ment un seul doit être particulièrement remercié très cordialement pour ses efforts et son travail, Mr T. B. Paltridge, Manager exceptionnel de ce Congrès. En lui nous honorons tous ceux qui par leur assistance efficace ont contribué au grand succès de ce 9e Congrès.

Remerciements

Des remerciements ont été formulés par des représentants d'Asie (Dr Kawaguchi, Japon), d'Europe (Dr Pédro, France), d'Afrique (Dr Obeng, Ghana) et des deux Amériques (Professeur Low, USA).

Les résolutions et les remerciements ont été suivis d'acclamations.

Discours de clôture du Dr E. G. Hallsworth

Ma tâche arrive maintenant presque à sa fin. La réalisation d'un Congrès de la Science du Sol est un avantage et une occasion pour le pays qui l'organise. Il nous a imposé en Australie d'évaluer le stock de nos ressources en population comme en sols. Nous avons besoin de connaître nos ressources humaines dans le but de pouvoir les distribuer pour le meilleur usage possible afin d'organiser ce Congrès à votre satisfaction. Nous avons besoin de faire l'inventaire de ce que nous savons de nos sols de façon à pouvoir faire les excursions les plus intéressantes et ainsi bénéficier au maximum des discussions avec nos visiteurs.

Ce fut en premier lieu une occasion, avec le Congrès comme point central, pour les membres de différentes organisations qui s'occupent des sols en Australie et spécialement en Australie du Sud de mieux les connaître. L'expérience que nous avons eue et dans laquelle les dirigeants du CSIRO, de l'Université et du Département de l'Agriculture de l'Australie du Sud ont travaillé en commun harmonieusement comme une équipe, ne peut pas manquer d'avoir un heureux effet sur les relations entre ces groupes dans l'avenir. Le Congrès nous a aussi apporté l'occasion de rencontrer et d'apprendre à connaître nos collègues des autres pays. Les relations amicales qui découleront de ces réunions sont le véritable édifice sur lequel notre Société est faite et qui lui ont permis de survivre à travers les temps difficiles du passé.

En ce qui concerne le second point, c'est une des vertus de notre système de tenir chaque Congrès successif dans un pays différent ce qui donne à tous les participants un meilleur aspect des problèmes de la science du sol. Les sols, comme nous le savons depuis longtemps sont le résultat de nombreux processus dont tous n'ont pas agi sur chaque sol ou dans chaque région. Plus notre connaissance des sols du monde sera vaste, plus nous serons capables de voir l'effet de ces différents processus dont un peut se manifester d'avantage dans un environnement et un autre dans un autre. Les sols du monde dans toutes leurs variétés et les problèmes différents qui se posent dans leur utilisation sont disposés en vue de leur étude comme un vaste livre pour ceux qui ont l'occasion de les voir et de le lire.

Le fait que le Congrès se soit tenu en Australie nous a donné l'occasion de montrer à nos visiteurs d'outre-mer quelques-unes des pages de ce livre qui concernent l'Australie. Si vous pouvez nous aider à le lire, nous pourrions comprendre plus clairement ce qui y est écrit et cela au bénéfice de la Science du Sol aussi bien en Australie que partout à travers le monde.

Dans un moment, je demanderai au Président pour l'Assemblée de 1974, le Professeur V. A. Kovda, de prendre place ici, et ensuite à son Excellence, le Lt Gouverneur de l'Australie du Sud, Sir Mellis Napier, de clôturer nos discussions. Avant cela, j'aimerais remercier tous mes collègues qui m'ont aidé dans cette entreprise, pour leur soutien très loyal, particulièrement à notre Manager du Congrès, Mr T. B. Paltridge. Chacun a exécuté les différentes tâches que je lui avais demandées mieux que ce que j'avais le droit de prévoir. D'où qu'ils viennent, CSIRO, Département de l'Agriculture ou Université, ils ont formé une équipe que j'ai dirigé avec plaisir et honneur. J'aimerais également remercier notre Secrétaire Général, le Dr F. A. van Baren pour l'aide et les conseils qu'il nous a prodigués même au cours de ce Congrès.

C'est avec plaisir que je cède maintenant la place au Professeur Kovda.

Cérémoni de Clôture du 9e Congrès International de la Science du Sol
Discours du Dr Kovda

J'aimerais exprimer, et je cherche à traduire correctement ma pensée russe, ma plus profonde gratitude aux membres du Congrès d'avoir accepté l'invitation faite par l'Académie des Sciences de l'URSS et la Société Nationale Soviétique de la Science du Sol de tenir le prochain Congrès en 1974 en URSS. Un grand merci pour votre confiance.

En second lieu, personnellement et au nom des membres de notre groupe, ma gratitude de m'avoir élu Président de l'AISS. C'est un honneur exceptionnel pour mon pays, pour mes collègues et pour moi personnellement. Je me dois de me souvenir du nom de nos anciens Présidents et c'est un extrêmement grand honneur d'avoir été élu.

Enfin, nous membres soviétiques de ce Congrès, nous aimerions remercier particulièrement le Gouvernement australien, le Comité de préparation et la Société de la Science du Sol d'Australie qui a préparé cet admirable Congrès et qui nous charge maintenant de maintenir à un haut niveau l'organisation et la conduite d'une telle entreprise. Dans notre revue nationale de la science du sol, nous publierons un article spécial consacré à ce Congrès. Nous connaissons la capacité de la nation australienne et nous connaissons de nombreux collègues australiens, et leur Président depuis de nombreuses années lorsqu'il s'est rendu à Moscou. Nous sommes en rapport avec bon nombre d'entre vous grâce à l'échange de contacts et de visites.

Comme Vice-Président de la Commission V, je voudrais insister sur l'importance particulière du projet de carte mondiale des sols commencée il y a 8 ans après le Congrès de Madison et qui vient d'être présentée à ce Congrès. Ceci constitue un premier accord et une première compréhension mutuelle.

Nous ouvrons une nouvelle ère dans les communications internationales entre pédologues. C'est le commencement d'un nouveau pas dans le progrès de la révolution de la science du sol. Vous attendez de moi quelques explications concernant le 10e Congrès.

Nous avons discuté du programme et des travaux avant d'envoyer notre invitation.

Pendant les discussions et les supputations que j'ai eues au cours de l'année avec mon ami Gerasimov, Vice-Président, nous avons essayé de savoir comment organiser le programme principal. Nous pensons que l'ouverture du Congrès pourrait se faire à Moscou, probablement dans le nouveau bâtiment de l'Université de Moscou. Les sessions de travail du Congrès se tiendront dans l'auditoire de l'Université de Moscou et à l'Académie des Sciences. Principaux objectifs du programme.

Je pense que tous les aspects de la pédologie expérimentale méritent d'être inscrits dans une partie de notre programme. Le côté chimique de la pédogenèse, la distribution des produits formant les sols.

Problème alimentaire. Problèmes de dominer le déficit alimentaire. Cela nous paraît être une question de productivité et de croissance. La fertilité des sols et l'efficacité de nos travaux doivent probablement être le composant du sol de notre programme futur.

Aucun Congrès ne se conçoit sans excursions, et celles d'Australie furent magnifiques. Nous veillerons à les éгалer dans notre programme avant et après les sessions du 10e Congrès.

Les Russes peuvent probablement organiser les excursions au départ de Moscou, vers le nord et dans le centre et le sud-est de la Russie. Symposiums à bâton rompu sur les aspects chimiques de différents reliefs de sol dans des endroits variés. Nous aimerions vous montrer la Sibérie. Je viens d'avoir l'accord des membres de notre groupe pour pouvoir organiser des symposiums et des excursions dans la région occidentale de la Sibérie.

Nous combinerons une partie des symposium spécialisés avec les excursions en vue d'accroître les données scientifiques et de discuter des résultats de l'excursion lorsque nous quitterons la région. Nous aurons également des symposium de spécialistes dans les différentes parties de l'Union Soviétique et cela en relation avec les impressions locales sur les sols et l'Agriculture.

Nous donnerons un reflet spécial aux célébrations du Jubilé en marge du 10e Congrès. Je voudrais suggérer que certains Australiens assistent à ce Congrès.

Un grand merci.

9. Internationaler Bodenkundlicher Kongreß

Dieser Kongreß war ein großartiger Erfolg sowohl von wissenschaftlicher Seite als auch von der Organisation her gesehen. Wie bereits im Bulletin Nr. 32 erwähnt, hat das Organisationskomitee mit Hilfe eines großen Verlages die eingesandten Vorträge, die bis zur Nummer 310 reichten, sorgfältig überprüft, in 4 sehr fachkundigen Bänden veröffentlicht und den Teilnehmern bei der Anmeldung ausgehändigt. Diese begrenzte Anzahl von Vorträgen schrieb einen strengen Zeitplan vor, an den man sich unbedingt hielt, indem keine unangekündigten Vorträge zugelassen und Vorträge abwesender Autoren (immer noch zu viele) nur als Zusammenfassung vorgelesen wurden. Dadurch blieb viel Zeit übrig für die Diskussion. Die Simultananlage für mehrere Sprachen war nahezu perfekt dank eines 6-monatigen Trainings von 18 nichtberuflichen Dolmetschern und der Hilfe von 9 ausländischen Berufsdolmetschern. Ebenso muß die ausgezeichnete bodenkundliche Ausstellung erwähnt werden, der man große Aufmerksamkeit beimaß.

Die Auswahl an Exkursionen vor und nach dem Kongreß war von solcher Vielfältigkeit, daß jeder Kongreßteilnehmer aus dem Ausland sich einen guten Überblick verschaffen konnte über die Böden des unermeßlichen australischen Kontinents. Ein besonderer Dank gebührt unserem vergangenen Präsidenten, Dr. Gordon Hallsworth, und dessen Gattin, die die Rolle einer bezaubernden Gastgeberin bei vielen ausländischen Besuchern und bei vielen weiteren Anlässen übernahm; ebenso einen Dank an den Kongreßleiter, T. Paltridge, an Dr. J. W. Holmes, Vorsitzender des Publikationskomitees, und an Herrn C. S. Wells, der für die Organisation der Simultan-Übersetzung verantwortlich zeichnete.

Der Kongreß wurde von 865 Teilnehmern besucht, die 52 Länder vertraten, wie unten aufgeführt:

Argentinien	1	Japan	12	Portugiesisch	
Australien	490	Kanada	28	W. Afrika	2
Belgien	5	Kenya	1	Rhodesien	1
Brasilien	1	Kuba	3	Rumänien	3
Dänemark	2	Malawi	1	Schweden	4
Deutsche Bund. R.	10	Malaya	7	Solomon Inseln	2
Deutsche Dem. R.	2	Marokko	1	Spanien	4
Fiji	1	Neu Caledonia	1	Südafrika	2
Finnland	1	Neuseeland	4	Taiwan	1
Frankreich	8	Niederlande	8	Tschad	1
Ghana	2	Norwegen	1	Tschechoslovakei	4
Griechenland	2	Österreich	1	Uganda	1
Grossbritannien	30	Pakistan	1	Ungarn	1
Indien	5	Peru	1	U.S.S.R.	23
Indonesien	1	Philippines	5	Venezuela	2
Iran	1	Polen	1	Verein. Arab. Rep.	2
Israel	3	Portugal	5	Ver. St. v. Amerika	118
Italien	7			Westindien	1

Auf die Diskussionspunkte wurde im Bulletin Nr. 32, 1968, eingegangen, in welchem sie rechtzeitig aufgeführt wurden. Die Mitglieder nahmen an den Exkursionen vor und nach dem Kongreß teil.

Die Gesellschaft fühlte sich besonders geehrt durch die Anwesenheit des General-Gouverneurs von Australien, Seine Exzellenz, der Rt. Hon. Lord Casey, PC, GCMG, CH, DSO, MC, KSTJ, der sein persönliches Interesse durch einen Einführungsvortrag bei der Eröffnungssitzung zeigte.

Am Dienstag, dem 6. August um 11.30 Uhr füllten etwa 1200 Personen die „Bonyhon Hall“ der Universität von Adelaide, um an der Eröffnungssitzung des 9. Internationalen Bodenkundlichen Kongresses teilzunehmen.

Folgende Punkte wurden erörtert:

1. Eröffnung des Kongresses.
2. Rede Seiner Exzellenz, des General-Gouverneurs von Australien.

3. Eröffnung der Generalversammlung und der Arbeitstagung durch Präsident Hallsworth.
4. Bericht des Generalsekretärs und des Schatzmeisters der Gesellschaft.
5. Bericht über die neuen Satzungen.
6. Sonstiges.

1—4: Der Präsident der Gesellschaft eröffnet den Kongreß und kündigt an, daß der Kongreß besonders geehrt sei durch die Anwesenheit Seiner Exzellenz, des General-Gouverneurs von Australien, der anschließend seine Begrüßungsrede hält. Im Anschluß daran folgt die Rede des Präsidenten.

Der Präsident fordert den Generalsekretär und den Schatzmeister der Gesellschaft auf, ihre Berichte vorzulesen.

Bericht des Generalsekretärs

Mitglieder

Die Mitgliedszahl ist konstant geblieben. Am 1. Juni 1968 wurden insgesamt 4440 Mitglieder verzeichnet, vertreten in 93 Ländern, verglichen mit 4487 Mitgliedern in 91 Ländern am 1. Juni 1964. Es scheint, daß der durch die Erhöhung der Mitgliedsgebühren entstandene Verlust an Mitgliedern durch neue Anmeldungen wieder vollkommen ausgeglichen ist.

Das folgende alphabetische Verzeichnis der Länder zeigt den gegenwärtigen Stand, verglichen mit der Mitgliedschaft am 1. Juni 1964.

	1.6.'64	1.6.'68		1.6.'64	1.6.'68
Aethiopien	1	—	Jamaika	4	2
Afghanistan	—	1	Japan	79	89
Algerien	—	1	Jugoslawien	40	41
Argentinien	174	208	Kambodscha	—	1
Australien	102	319	Kamerun	4	3
Belgien	172	117	Kanada	207	212
Bolivia	1	1	Kenya	6	4
Brasilien	33	35	Kolumbien	10	7
Britisch Guyana	3	—	Kongo	1	2
Bulgarien	39	32	Korea	3	2
Burma	3	1	Kuba	1	1
Ceylon	2	6	Libanon	6	5
Chile	2	4	Libyen	1	—
China	1	1	Luxemburg	2	2
Costa Rica	3	12	Madagascar	4	—
Dahomey	1	—	Marokko	4	5
Dänemark	68	63	Mexiko	51	38
Deutsche Bundesrep.	136	154	Nepal	1	1
Deutsche Dem. Rep.	73	73	Neuseeland	279	130
Domin. Republik	—	1	Niederlande	109	103
Ecuador	3	3	Nigerien	6	14
Elfenbeinküste	1	1	Norwegen	6	5
El Salvador	1	1	Oesterreich	84	80
Fed. Malaysia	9	7	Pakistan	10	12
Finnland	19	26	Paraguay	1	1
Frankreich	81	70	Peru	3	15
Ghana	10	28	Philippines	13	14
Griechenland	6	12	Polen	49	37
Grossbritannien	232	280	Portugal	89	99
Guatamala	3	4	Rhodesien	4	10
Haiti	—	1	Rumänien	77	111
Honduras	3	1	Schweden	60	78
Indien	71	62	Schweiz	17	16
Indonesien	3	6	Senegal	1	11
Iran	5	20	Seychelles	1	—
Iraq	5	5	Sierra Leone	—	2
Irland	54	31	Singapore	—	1
Israel	126	67	Spanien	104	79
Island	2	2	Südafrika	69	112
Italien	78	195	Sudan	10	13

Surinam	2	3	Uganda	4	9
Swaziland	—	3	Ungarn	37	37
Syrien	3	3	Uruguay	1	2
Tanzania	1	2	U.S.S.R.	82	82
Thailand	2	11	Venezuela	9	11
Togo	1	1	Vietnam	2	—
Trinidad	6	6	Verein. Arab. Rep.	66	39
Tschechoslowakei	21	35	Verein. St. v. Amerika	1239	967
Tunesien	3	7	Zypern	2	2
Türkei	10	8	Zambia	4	9

In der Zeit von 1964—1968 haben wir wiederum eine erhebliche Anzahl von Kollegen verloren. Die Todesanzeigen erschienen zwar in unserem Bulletin, aber ihre Namen verdienen hier noch einmal erwähnt zu werden.

1964 — Herbert Greene (U.K.); Ehrenmitglied G. Bertrand (Frankreich).

1965 — J. V. Botelho da Costa (Portugal); W. Gardner (U.S.A.); Akademiemitglied I. N. Antipov-Karataev (U.S.S.R.); Ehrenmitglied W. P. Kelly (U.S.A.).

1966 — Sir E. John Russell (U.K.); J. K. Dixon (Neuseeland); J. M. Albareda Herrera (Spanien); A. Musierowicz (Polen); V. Novák (Tschechoslowakei).

1967 — J. Hudig (Niederlande); Ex-Präsident N. Cernescu (Rumänien); Sterling A. Taylor (U.S.A.).

1968 — H. Gisin (Australien); E. Protopopescu-Pake (Rumänien); Th. Sidel (Rumänien); Sh. Ionescu-Sisesti (Rumänien); J. Tomaszewski (Polen); Frau Jadwiga M. Ziemiecka (Polen).

Während des Kongresses erreichte uns die traurige Nachricht vom Tod des Herrn Prof. Mircea Popovatz (Rumänien) und Prof. Prattolongo (Italien).

Alle diese verstorbenen Kollegen haben der Gesellschaft Zeit und Energie gewidmet.

Wir wollen ihrer stets in Ehren gedenken!

Sitzungen der I.S.S.S. Kommissionen

Die Kommissionen II und IV hatten eine gemeinschaftliche Tagung vom 5.—10. September 1966 in Aberdeen (Schottland); im Anschluß daran fand eine Exkursion statt. Die Kommission III hielt eine Tagung ab über die „Dynamik der Boden-Ökologie“ vom 5.—10. September 1966 in Braunschweig-Völkenrode (Westdeutschland). Die Kommission V hielt eine Konferenz ab über „Mediterrane Böden“ vom 12.—18. September 1966 in Madrid (Spanien). Dieser Konferenz ging eine Exkursion durch einen Teil von Marokko voraus, im Anschluß daran unternahm man eine Exkursion durch Südspanien und Portugal.

Berichte über diese Tagungen wurden in verschiedenen Nummern des Bulletins veröffentlicht.

Internationale Kontakte

Unsere Gesellschaft wurde vertreten durch Dr. Tamm und Dr. Odin (Schweden) auf der 4. Tagung der Kommission für Klimatologie (C.C.T.) vom 12.—26. August 1965 in Stockholm.

Expräsident Dr. R. Bradfield vertrat die I.S.S.S. auf der Sitzung der Kommission für Landwirtschaftliche Klimatologie vom 15.—29. November 1967 in Manila (Philippinen).

Der Generalsekretär besuchte verschiedene Sitzungen der Arbeitsgruppe für das Projekt „Weltbodenkarte“ in Rom (1965, 67, 68) und in Moskau (1966).

Er nahm an den von der UNESCO unterstützten Projekten über versalzte Böden in Budapest (1967) und Jugoslawien (1968) teil und vertrat die Gesellschaft auf einer Sitzung der „Commission internationale de Genie Rural“ in Paris (1966).

Nationale Gesellschaften

Seit 1964 wurden noch 2 weitere Gesellschaften gegründet, und zwar die Kolumbianische Bodenkundliche Gesellschaft und die Bodenkundliche Gesellschaft der DDR, beide entstanden im Jahre 1967.

Verwaltungsarbeit

In der Zeit vom 1.8.1964—24.7.1968 erhielten wir 3738 Briefe und versandten 2938 Briefe. Ebenso wurden 37.882 Kopien des Bulletins und 4758 Kopien der neuentworfenen Satzungen abgesandt. Es wurden 64 Buchbesprechungen veröffentlicht. Das Amsterdamer Büro konnte einen Verkauf von 385 Kopien des bodenkundlichen Wörterbuches, 650 Kopien der japanischen Bodenfarben-Karte und 64 Kopien der „Bodenmikromorphologie“ verzeichnen.

Bericht des Schatzmeisters

Der folgende Überblick der Einnahmen und Ausgaben wurde zwecks Entlastung durch die Generalversammlung vorgelegt.

<i>Einnahmen</i>		<i>Ausgaben</i>	
Beiträge	f 85.534,76	Kauf von Wertpapieren	f 16.765,32
Verkaufte Wertpapiere	„ 2.290,50	Druckkosten	„ 24.702,98
Zinsen	„ 2.737,96	Postgebühren usw.	„ 22.122,17
Bodenkarten, Wörterbücher	„ 15.769,78	Sekretariatsarbeit	„ 18.237,50
Kassenbestand	„ 3.183,78	Reisekosten	„ 6.604,71
		Bodenkarten, Wörterbücher	„ 13.822,64
		Sonstiges	„ 1.592,96
	<hr/>		<hr/>
	f 103.848,28		f 103.848,28

Der ausführliche Bericht wurde von einem amtlichen Rechnungsprüfer durchgesehen und einem vom Rat aufgestellten Komitee zur nochmaligen Durchsicht vorgelegt. Dieses Komitee bestand aus Dr. M. Fieldes (Neuseeland) und Dr. H. B. Obeng (Ghana). Dr. Fieldes berichtete, daß das Komitee die Verwaltungsarbeit des Schatzmeisters für gut befand und schlug Entlastung vor. Sowohl der Verwaltungs- als auch der Finanzbericht wurden daraufhin von der Hauptversammlung gebilligt. Der Präsident dankte Dr. F. A. van Baren für die Art und Weise, wie er die geschäftlichen Dinge der Gesellschaft durchführte.

5. Neue Satzungen

Die neuen Satzungen, die allen Mitgliedern als Entwurf zugesandt wurden, sind mit Ausnahme von einigen wenigen Änderungen angenommen worden.

Punkt H. 1. c wurde folgendermaßen geändert:

Nicht mehr als 6 Vertreter für die Mitglieder, deren Länder keine nationale Bodenkundliche Gesellschaft unterhalten, vorausgesetzt es ergeben sich mindestens 20 Mitglieder der I.S.S.S. für jeden Vertreter.

Punkt I. 10 wurde geändert:

Ein Mitglied kann zu irgendeiner Zeit ein Vorstandsmitglied von nur einer Kommission oder Sub-Kommission sein.

Punkt M. 3 wurde geändert:

Der Präsident und der Generalsekretär der Gesellschaft sind gemeinschaftlich befugt, ein oder mehrere Mitglieder zu benennen, die die Gesellschaft bei Tagungen anderer Gesellschaften oder Konferenzen vertreten, auf denen für die Gesellschaft interessante Themen diskutiert werden.

Die zweite Sitzung der Versammlung fand am Donnerstag vormittag, dem 15. August, statt; auf der Tagesordnung standen folgende Punkte:

1. Eröffnung.
2. Besprechung des nächsten Kongresses.
3. Wahl der Vertreter im Exekutiv-Komitee.
4. Vorstandsmitglieder für die Kommissionen der Gesellschaft.
5. Kontaktaufnahme.
6. Ehrenmitglieder.
7. Beschlüsse.
8. Rede des scheidenden Präsidenten.

9. Rede des neugewählten Vize-Präsidenten.
 10. Schluß des Kongresses durch den Lt. Gouverneur von Südastralien, Sir Mellis Napier.

1. Der Präsident eröffnete die Tagung und teilte mit, daß der Rat 3 Sitzungen abgehalten habe, in denen man Probleme der Gesellschaft in Verbindung mit dem Artikel H-2 der neuen Satzungen diskutiert habe. Zwei Punkte von allgemeinem Interesse sollte man erwähnen:

a) **Kongresse in nächster Zeit**

Die finanziellen Möglichkeiten, einen Kongreß zu organisieren, wozu ebenfalls die Druckkosten für die Vortragsmanuskripte und die Simultananlage gehören, wurden von einem speziell für diesen Zweck ausgewählten Komitee erwogen. Das Komitee besteht aus folgenden Mitgliedern: Prof. J. P. Quirk (Australien), Vorsitzender. Dr. G. H. Bolt (Niederlande), Dr. I. D. Staicu (Rumänien) und Dr. H. B. Obeng (Ghana).

Nachdem die Angelegenheit sorgfältig diskutiert wurde, entschied der Rat, daß ein Arbeitskomitee ernannt werden soll, das aus folgenden Mitgliedern besteht: Dr. E. Schlichting (Westdeutschland), Einberufender (Federführender), Dr. G. H. Bolt (Niederlande), Dr. I. P. Gerasimov (U.S.S.R.), Dr. M. L. Jackson (U.S.A.), Dr. T. J. Marshall (Australien), der Generalsekretär, der ebenfalls als Sekretär fungiert. Dieses Komitee wird sich um folgende Fragen kümmern:

1. Häufigkeit der abzuhaltenden Kongresse.
2. Veröffentlichung der Vortragsmanuskripte (proceedings).
3. Tagungen der Kommissionen und gemeinsame Tagungen der Kommissionen zwischen den Kongressen.

Da die nächsten Beratungen zu der Notwendigkeit führen werden, die Satzungen zu ändern, wurde entschieden, daß von jetzt ab ein ständiges Komitee, das aus J. P. Gerasimov (U.S.S.R.), E. Mückenhausen (Westdeutschland), E. W. Russell (G.B.), R. Tavernier (Belgien) und F. A. van Baren (Generalsekretär) besteht, für die Satzungen verantwortlich ist.

b) **50. Jahrestag (Gründungstag)**

Der Rat beschloß, daß der 50. Jahrestag der Gesellschaft, die im Jahre 1924 gegründet wurde, 1974 gefeiert werden soll. Ein Jubiläums-Komitee soll aufgestellt werden mit Vertretern aus Australien, Frankreich, Deutschland, Indien, Italien, Japan, Skandinavien, U.S.A. und U.S.S.R. Der Generalsekretär soll ebenfalls Sekretär dieses Komitees sein.

2. Die Einladung der Bodenkundlichen Gesellschaft der Vereinigten Sowjetrepubliken, den nächsten Kongreß in der U.S.S.R. stattfinden zu lassen, wurde angenommen. Da man entschied, daß im Jahre 1974 eine Jubiläumstagung organisiert werden sollte, man aber andererseits abgeneigt ist, zu viele internationale Tagungen durchzuführen, kam man zu der Übereinstimmung, daß der 1974 in der U.S.S.R. stattfindende 10. Internationale Kongreß der Bodenkundlichen Gesellschaft auch gleichzeitig eine Gedenktagung aus Anlaß des 50. Jahrestages sein soll.

3. Auf Empfehlung des Akademie-Mitgliedes Gerasimov, Leiter der U.S.S.R.-Delegation, ernannte der Rat Dr. V. Kovda zum Präsidenten der I.S.S.S. und Dr. I. P. Gerasimov zum Vize-Präsidenten. Dr. F. A. van Baren wurde als Generalsekretär wiedergewählt, und Dr. P. Buringh (Niederlande) wurde zu seinem Stellvertreter ernannt.

4. Der Präsident bat den Generalsekretär, die Namen der Mitglieder vorzulesen, die als Vorstandsmitglieder der Gesellschaft ernannt wurden.

Kommission I	Präsident	:	W. Gardner	(U.S.A.)
	Ex-Präsident	:	G. H. Bolt	(Niederlande)
	Vize-Präsidenten:		M. Kutilek	(Tschechoslovakei)
			K. H. Hartge	(W. Deutschland)
Kommission II	Präsident	:	H. Laudelout	(Belgien)
	Ex-Präsident	:	J. M. M. J. Fripiat	(Belgien)
	Vize-Präsidenten:		K. Wada	(Japan)
			G. Pedro	(Frankreich)

Kommission III	Präsident	: G. Fahreaus	(Schweden)
	Ex-Präsident	: J. Macura	(Tschechoslovakei)
	Vize-Präsidenten:	M. Alexander	(U.S.A.)
		M. Phillipson	(Grossbritannien)
Kommission IV	Präsident	: O. T. Rotini	(Italien)
	Ex-Präsident	: Y. Ishizuka	(Japan)
	Vize-Präsidenten:	C. H. Williams	(Australien)
		N. H. Miller	(Kanada)
Kommission V	Präsident	: R. Dudal	(Italien)
	Ex-Präsident	: V. A. Kovda	(U.S.S.R.)
	Vize-Präsidenten:	E. Schlichting	(W. Deutschland)
		N. Florea	(Rumänien)
Kommission VI	Präsident	: T. J. Marshall	(Australien)
	Ex-Präsident	: I. D. Staicu	(Rumänien)
	Vize-Präsidenten:	E. W. Russell	(Grossbritannien)
		J. S. Kanwar	(Indien)
Kommission VII	Präsident	: K. Norrish	(Australien)
	Ex-Präsident	: B. Mitchell	(Grossbritannien)
	Vize-Präsidenten:	U. Schwertmann	(W. Deutschland)
		A. D. Scott	(U.S.A.)

5. Zusammenkünfte

Artikel 1—7 der Satzungen sieht vor, daß die Kommissionen mit Zustimmung des Rates Sondersitzungen zwischen den einzelnen Kongressen abhalten können. So wird z.B. genehmigt, daß:

- a) eine Sitzung der Kommission IV im Jahre 1970 in Neu Delhi (Indien) stattfinden soll, und zwar über „Feststellung der Bodenfruchtbarkeit und die Anwendung von Dünger unter tropischen und subtropischen Bedingungen“. Man war der Ansicht, daß Paddy-Böden ebenfalls erörtert werden sollten, wobei man in diesem Fall die Kommission V hinzuziehen könnte;
- b) eine Sitzung der Kommissionen V und VI 1970 abgehalten werden sollte mit dem Hauptthema: „Entstehung des Pseudogleys, Klassifikation, Melioration und Kultivierung“. Ort und Zeit sollen später festgelegt werden;
- c) wenn möglich, zwischen den Kongressen eine gemeinschaftliche Tagung der Kommissionen II, III, IV und VI abgehalten werden sollte mit dem Thema „Wirkung der Bodenfaktoren auf die pflanzliche Produktion“. Ort und Zeit sollen später festgesetzt werden.

Der Rat befürwortete weiterhin, daß die INQUA-Kommission für Paläopedologie über das Interesse der I.S.S.S. an diesem Sachgebiet und ihre Bereitschaft zur Zusammenarbeit durch die Kommission V informiert werden soll.

Abgesehen von der getroffenen Entscheidung, den Jubiläumskongreß im Jahre 1974 abzuhalten und in der Zwischenzeit Kommissions-Tagungen zu organisieren, fand der Vorschlag von Dr. Tavernier, einmal die Möglichkeit zu prüfen, ob der nächste Kongreß nicht doch 1971 in einem der europäischen Länder stattfinden könne, den Beifall des Rates. Man war der Meinung, daß eine Pause von 6 Jahren zwischen den internationalen Kongressen nicht im Interesse der Gesellschaft liegen dürfte.

6. Ehrenmitglieder

Die Gesellschaft verlieh die Ehrenmitgliedschaft an folgende ausgezeichneten Bodenkundler:

Prof. F. Hardy, C.B.E., M.A., Dip. Agric. (Cantab). Prof. Hardy, 1893 geboren, zog sich erst vor kurzer Zeit, im Alter von über 75 Jahren, von der Arbeit zurück. Er ist einer der wenigen Bodenkundler, die ihre ganze Aktivität dem Studium der tropischen Böden widmete. Seine „Studien der Westindischen Böden“, wovon 13 in der Zeit von 1922 bis 1947 veröffentlicht wurden, zeugen von seiner außergewöhn-

lichen Fähigkeit. Er war es, der die Grundlage schuf für die Bodenkartierung, die durchgeführt wurde, seit er 1956 das „Imperial College of Tropical Agriculture“ in Trinidad verließ. Ebenso wurde er lange Zeit als führende Persönlichkeit auf dem Gebiete der Kakao-Böden sowie der Ernährung und der Milieubedingungen des Kakao-Baumes anerkannt. Prof. Hardy wandte sich ebenfalls den mehr fundamentalen Aspekten der Bodenkunde zu, wobei unter vielen seiner Arbeiten, vor allem die „Studien tropischer Böden“ das besondere Interesse aller Studierenden der tropischen Bodenkunde erweckten.

Prof. Dr. Dr. W. L. Kubiena. Prof. Kubiena ist am 30.6.1897 geboren. Er kann auf eine glänzende Karriere zurückblicken als Bodenkundler und bemerkenswerterweise als Schöpfer der neuorganisierten Fachrichtung „Mikromorphologie“, in der er noch jetzt tätig ist. Im Jahre 1937 erschien seine „Mikropedologie“, im wesentlichen aufbauend auf seine Vorlesungen in Ames, Iowa (U.S.A.) und er zeigte die dynamische Arbeitsrichtung in Bezug auf bodenmorphologische Probleme, die auf mikroskopischen Untersuchungen der Bodenstruktur basieren. Seitdem diese Fachrichtung weltweites Interesse erlangte, reiste Dr. Kubiena um die ganze Welt und hielt Vorlesungen in vielen Ländern, womit er der Entwicklung der Bodenkunde einen entscheidenden Fortschritt brachte. Sehr bekannte Bücher sind: „Die Entwicklungslehre des Bodens“ (Wien 1938), „Die Böden von Europa“ (London, Madrid, Stuttgart 1953), wo er zahlreiche Abhandlungen über verwandte Probleme schrieb. Er ist Ehrenmitglied des Spanischen Forschungsrates, Mitglied der Spanischen Akademie der Wissenschaften, der Deutschen Akademie der Forscher und Ehrenmitglied der Deutschen Bodenkundlichen Gesellschaft.

Dr. L. A. Richards, geb. 24. April, 1904. Als ausgebildeter Physiker begann er seine Laufbahn in dem berühmten Salz-Forschungslabor in Riverside im Jahre 1939, und seitdem widmete er seine ganze Zeit und Energie dem Studium der Wüsten- und Halbwüstenböden. Sein internationaler Ruf wurde gefestigt durch die Herausgabe seines Buches, das weitbekannt ist und als Handbuch 60 benutzt wird: „Diagnose und Verbesserung der Salz- und Alkaliböden“. Viele Ehrungen wurden ihm verliehen, z.B. die präsidentielle Ehrenurkunde 1948, der Stevenson-Preis 1949, der Preis für höchste Verdienste der Landwirtschaftlichen Abteilung 1959. Er war Hauptvortragender sowohl auf dem 4. als auch auf dem 7. Internationalen Bodenkongreß, der 1950 in Amsterdam und 1960 in Madison (Wisconsin) stattfand. Im Jahre 1965 wurde er zum Präsidenten der Amerikanischen Landbaugesellschaft ernannt. Er ist der Verfasser von zahlreichen Abhandlungen und Kapiteln wissenschaftlicher Bücher. Seine Beiträge zur Kenntnis der ariden und semi-ariden Gebiete sind für Bodenkundler und für Landwirte gleichermaßen von unermeßbarem Wert.

Prof. Dr. A. A. Rode, geb. 21. April 1896. Dr. Rode ist einer der hervorragendsten Bodenkundler der U.S.S.R. Er ist Verfasser von über 180 Schriften und Büchern, die sich alle mit verschiedenen Problemen der Bodenkunde befassen. Im Jahre 1937 wurde die 454 Seiten umfassende Monographie „Podsolbildender Bodenprozeß“ in Moskau veröffentlicht. Theoretische Probleme der zeitabhängigen Bodenbildung wurden in dem Band „Bodenbildende Prozesse und Entwicklung der Böden“ (1947) beschrieben. Sein besonderes Interesse des Wasserhaushaltes fand Niederschlag in fünf Büchern, die in der Zeit von 1952—1965 veröffentlicht wurden und die zusammen nicht weniger als 1633 Seiten Text umfassen. Das im Jahre 1962 in englischer Sprache veröffentlichte Werk „Bodenkunde“ trug zu einer weltweiten Anerkennung seines guten Vermögens bei, die Böden der U.S.S.R., ihre Entstehung, Eigenschaften und Verbreitung zu beschreiben. Die Akademie der Wissenschaften der U.S.S.R. verlieh ihm die „Dokuchaev Goldmedaille“, die höchste Auszeichnung für einen Bodenkundler. Hingabe an die Wissenschaft, ein breites Verständnis gegenüber der Forschungstätigkeit, große Belesenheit und eine unglaubliche Arbeitskapazität sind nur einige Charakteristika von Prof. A. A. Rode.

Beschlüsse

Folgende Beschlüsse wurden angenommen:

Die anlässlich der Tagung über die FAO/UNESCO-Weltbodenkarte am Dienstag, dem 13. August 1968 in Adelaide versammelten Mitglieder der IBG möchten der FAO und der UNESCO ihre große Anerkennung aussprechen für die großartige Arbeit, die sie bis jetzt auf die Ausföhrung des Projektes verwandt haben, und besonders den betroffenen Ausführenden und denjenigen, die bei der Vorbereitung des Entwurfes für die verschiedenen Länder geholfen haben; ebenso den etwa 300

Kollegen in aller Welt, für ihre wertvollen Beiträge, und diesen Kollegen trafen zusammen in dem historischen Augenblick, in dem die erste gutfundierte Bodenkarte der Welt der internationalen Bodenkunde vorgelegt wurde.

Durch diese Arbeit beeindruckt und in der Erkenntnis, ihren hervorragenden Wert für Wissenschaftler, Lehrer und Studenten daraus zu gewinnen, bitten sie dringend die verantwortlichen Dienststellen der beiden Vertretungen der Vereinten Nationen, daß die Weltbodenkarte zum baldmöglichsten Termin, in jedem Fall aber vor dem 10. Internationalen Bodenkundlichen Kongreß im Jahre 1972 fertiggestellt werden soll, und zwar in gedruckter Form, einschließlich einer „reliability“-Karte und dem Erläuterungstext.

Die Mitglieder zeigen Verständnis dafür, daß die auf Grund zusätzlicher Geländearbeit gemachten Verbesserungen noch vor dem endgültigen Druck eingefügt werden müssen. Jedoch sind sie der Meinung, daß das kein Hinderungsgrund sein dürfte, die Karten vor dem nächsten Kongreß zu publizieren.

Die in einer Hauptversammlung am 15. August 1968 in Adelaide (Südaustralien) versammelte IBG richtet ihren herzlichsten Dank für das große Interesse an dem 9. Internationalen Kongreß an die Commonwealth-Regierung von Australien, besonders an Seine Exzellenz, den Rt. Hon. Lord Casey, den Generalgouverneur, der uns die Ehre gab, den Kongreß zu eröffnen, an alle Staatsregierungen, speziell von Südaustralien, und an die Stadtverwaltung von Adelaide. Die IBG spricht der Universität von Adelaide, der C.S.I.R.O. und nicht zuletzt der Australischen Bodenkundlichen Gesellschaft ihre besondere Hochachtung aus für ihre anhaltende und unentbehrliche Unterstützung.

Unter vielen, die es verdient hätten, namentlich genannt zu werden, soll einer herausgegriffen werden, dem ein ganz herzlicher Dank gesagt sei für seine Leistungen und Bemühungen, Mr. T. B. Paltridge, Kongreßleiter von außergewöhnlicher Fähigkeit. Mit ihm ehren wir alle, die durch ihre mühevollen Hilfe diesen 9. Kongreß zu solch einem großartigen Erfolg werden ließen.

Dankesworte

Dankesworte wurden ausgesprochen von Vertretern aus Asien (Dr. Kawaguchi, Japan), Europa (Dr. Pedro, Frankreich), Afrika (Dr. Obeng, Ghana) und Amerika (Prof. Low, U.S.A.).

Die Beschlüsse und Dankesworte fanden den Beifall der Versammlung.

Dr. E. G. Hallsworth, Schlußrede

Meine Aufgabe nähert sich nun dem Ende. Das Abhalten eines Bodenkongresses bedeutet eine Herausforderung und eine Bewährungschance für das Land, das ihn durchführt. Es erfordert von uns in Australien, eine Bilanz zu ziehen über unsere Möglichkeiten, sowohl personell als auch in Bezug auf unsere Böden. Wir mußten unsere personellen Möglichkeiten abschätzen, um sie richtig zu verteilen und sie optimal einzusetzen zur Vorbereitung dieses Kongresses, der Sie zufriedenstellen sollte. Wir mußten die Kenntnisse von unseren Böden zusammentragen, um einmal die interessantesten Exkursionen zu planen und zum anderen den größten Nutzen aus den Diskussionen mit unseren Besuchern zu ziehen.

Hierbei ergibt sich eine Gelegenheit, die Mitglieder der verschiedenen bodenkundlichen Organisationen in Australien, besonders in Südaustralien, mit dem Kongreß als Brennpunkt besser kennenzulernen. Die Erfahrung, die wir gemacht haben, in welcher Weise die Leiter der C.S.I.R.O., der Universität und der Südaustralischen Landwirtschaftlichen Abteilung harmonisch als ein Team zusammenarbeiteten, erlaubt uns die Folgerung, daß auch in Zukunft die guten Beziehungen zwischen diesen Gruppen gewährleistet ist. Der Kongreß gibt uns ebenfalls Gelegenheit, unsere Kollegen anderer Länder zu treffen und kennenzulernen. Die Freundschaften, die aus diesen Tagungen hervorgehen, sind die Struktur, aus welcher unsere Gesellschaft besteht, und die es uns ermöglicht haben, schwierige Zeiten der Vergangenheit zu überbrücken.

Auf der anderen Seite ist einer der großen Vorzüge unseres Systems, jeden nachfolgenden Kongreß in einem anderen Land abzuhalten, so daß allen Teilnehmern ein besserer Gesamtüberblick über die Probleme der Bodenkunde gegeben werden kann. Böden, so haben wir lange Zeit geglaubt, sind das Ergebnis vieler Prozesse, die nicht alle auf jeden Boden und in jedem Land zum tragen kommen. Je größer unsere Kenntnisse der Böden der Welt sind, um so mehr sind wir imstande, die Wirkung dieser verschiedenen Prozesse zu erkennen, denn einer wird

in dem einen Milieu, der in einem anderen stärker hervortreten. Die Böden der Welt in ihrer Vielfältigkeit und ihrer verschiedenen Probleme, die aus ihrer Nutzung entstehen, sind zum Studium da wie ein umfangreiches Buch für diejenigen, die die Gelegenheit haben zu sehen und die Augen haben, es zu lesen.

Der Kongreß in Australien hat uns die Gelegenheit gegeben, unseren Besuchern über dem Atlantik einige Seiten von dem Buch zu zeigen, das sich mit Australien beschäftigt. Wenn Sie uns helfen können, dieses zu lesen, werden wir alle besser verstehen, was darin geschrieben ist zum Nutzen der Bodenkunde in Australien sowie in anderen Teilen der Welt.

In wenigen Augenblicken werde ich den Präsidenten der Tagung 1974 bitten, zu uns zu sprechen und daraufhin Seine Exzellenz, den Gouverneur-Leutnant von Südaustralien, Sir Mellis Napier, unseren Kongreß zu beschließen. Bevor ich dieses tue, möchte ich all meinen Kollegen, besonders unserem Kongreßleiter, Mr. T. B. Paltridge, danken, die mir bei diesem Unternehmen mit ihrer zuverlässigen Unterstützung zur Seite standen. Jeder von ihnen versah sein Amt in einer Weise, die über dem lag, was ich hätte erwarten können. Von welcher Organisation auch immer, C.S.I.R., Landwirtschaftsministerium oder Universität, sie alle bildeten ein Team, dessen Leitung zu übernehmen eine Freude und Ehre war. Ebenso möchte ich unserem Generalsekretär, Dr. F. A. van Baren, danken für seine Hilfe und seine Fernlenkung, auch während der Kongreßzeit.

Ich gebe mein Amt gerne an Prof. Kovda ab.

Rede des Herrn Dr. Kovda - Anschluß des 9. Internationalen Bodenkongresses

Indem ich mich bemühe, meine Gedanken in einer geeigneten Übersetzung auszudrücken, möchte ich den Mitgliedern des Kongresses meinen tiefsten Dank aussprechen, daß sie die Einladung der Akademie der Wissenschaften der U.S.S.R. und der Nationalen Sowjetrussischen Bodenkundlichen Gesellschaft angenommen haben, den nächsten Kongreß 1974 in der U.S.S.R. abzuhalten. Ich danke Ihnen für Ihr Vertrauen!

Zum zweiten mein persönlicher Dank und der Dank der Mitglieder unserer Gruppe, daß Sie mich zum Präsidenten der I.S.S.S. ernannt haben. Dies ist eine außergewöhnliche Ehre für mein Land, für meine Kollegen und für mich persönlich. Ich erinnere mich an die Namen der letzten Präsidenten und finde, daß es eine äußerst große Ehre ist, gewählt zu werden.

Schließlich möchten wir Sowjetmitglieder dieses Kongresses besonders der Australischen Regierung, dem Organisationskomitee und der Australischen Bodenkundlichen Gesellschaft danken, die diesen ausgezeichneten Kongreß vorbereitet haben und die es uns nun zur mühevollen Aufgabe machen, das hohe Niveau der Organisation und Kongreßdurchführung zumindest aufrechtzuerhalten. In unserem nationalen bodenkundlichen Magazin werden wir diesem Kongreß einen besonderen Artikel widmen.

Wir wußten von der Fähigkeit der australischen Nation, und wir kannten viele australische Kollegen, wir kannten den Präsidenten seit Jahren, seit er in Moskau gewesen ist. Wir stehen mit vielen von Ihnen in Verbindung durch beiderseitige Interessen und durch gegenseitige Besuche.

Als Vize-Präsident der Kommission V möchte ich die besondere Bedeutung des Weltbodenkarteprojektes hervorheben, dessen Bearbeitung vor 8 Jahren nach dem Kongreß in Madison aufgenommen und auf diesem Kongreß vorgelegt wurde. Dies ist die erste Übereinstimmung und die erste gegenseitige Verständigung.

Dies ist der Anfang einer neuen Ära internationaler Verbindungen der Bodenkundler. Es ist der Anfang eines neuen Fortschritts in der Revolution der Bodenkunde.

Sie erwarten gewiß einige Worte von mir bezüglich des 10. Kongresses.

Das Programm und die Möglichkeiten haben wir besprochen, ehe wir die Einladung aussprachen.

In seit etwa einem Jahr geführten Diskussionen und Berechnungen mit meinem Freund Gerasimov, dem Vize-Präsidenten, haben wir vorläufige Ideen entworfen, wie wir das Hauptprogramm gestalten. Wir denken, daß die Eröffnung des Kongresses in Moskau sein sollte — wahrscheinlich in dem neuen Gebäude der Moskauer Universität. Die Arbeitssitzungen des Kongresses werden in dem Auditorium der Moskauer Universität und der Akademie der Wissenschaften stattfinden.

Die wichtigen Punkte des Programms

Ich bin der Meinung, daß alle Gesichtspunkte der experimentellen Bodenkunde verdienen, in einen Teil unseres Programms aufgenommen zu werden. Die chemische Seite der Bodenentstehung, die Verteilung der bei den Bodenbildung entstehenden Produkte. Die Ernährungsfrage. Probleme zur Überwindung des Nahrungsdefizits. Dies scheint uns eine Angelegenheit der Produktivität und des Pflanzenwachstums zu sein. Bodenfruchtbarkeit und die Wirksamkeit unserer Arbeit sollen wahrscheinlich Bestandteile unseres zukünftigen Programms bilden.

Es gibt keinen Kongreß ohne Exkursionen, und die Exkursionen in Australien waren wunderschön! Wir werden versucht sein, etwas Gleichwertiges in unser Programm vor und nach den Arbeitssitzungen des 10. Kongresses zu bringen. Wahrscheinlich werden wir die Exkursionen so planen, daß sie von Moskau aus starten, nach Norden und dann durch zentrale und südöstliche Gebiete Rußlands führen. „Unterwegs“-Symposien und Diskussionen, die die chemischen Aspekte verschiedener Bodenlandschaften an verschiedenen Plätzen zeigen. Wir möchten Ihnen gerne Sibirien zeigen. Ich habe jetzt schon weitgehende Übereinstimmung mit Mitgliedern unserer Gruppe, daß wir Symposien und Exkursionen in einem Gebiet Westsibiriens haben können.

Wir suchen die Verbindung zwischen speziellen Symposien und Exkursionen, um die wissenschaftlichen Ergebnisse zu erhalten und zu diskutieren, während wir unterwegs sind und bevor wir die Landschaft verlassen. Auf diese Weise werden wir ein spezielles Symposium, jeweils auf verschiedene Gebiete der Sowjetunion verteilt, haben in Verbindung mit lokalen Eindrücken von Böden und Landwirtschaft.

Wir werden den Jubiläums-Feierlichkeiten als ein Teil des 10. Kongresses besondere Beachtung schenken. Ich würde vorschlagen, Personalhilfe aus Australien für diesen Kongreß zu exportieren!

Vielen Dank!

NEWS OF THE SOCIETIES

Canadian Society of Soil Science

Dr. J. E. Brydon has been appointed representative of the Canadian Society to the I.S.S.S.

New Zealand Society of Soil Science

Dr. M. Fieldes has been appointed representative of the New Zealand Society to the I.S.S.S.

Società Italiana della Scienza del Suolo

At the general meeting of the Italian Soil Science Society on June 20, 1968 the following Board was elected:

President: Prof. G. P. Ballatore, director of the Agronomical Institute of the University of Palermo.

Representative I.S.S.S.: Prof. F. Mancini of the University of Florence.

Members: Prof. L. Cavazza, University of Bari

Prof. A. Malquori, University of Florence

Prof. O. Y. Rotini, University of Pisa

Prof. G. Sanesi, University of Florence

Prof. G. Stefanelli, University of Florence

Soil Science Society of Japan

The annual meeting of the Society was held in Tokyo from April 1 to 3, 1968 and was a great success. 317 Papers were presented and some 800 persons attended the meeting.

The following executive members were elected for the period from April 1968 to March 1970.

President: Prof. Dr. Shigenori Aomine (Kyushu University, Kyushu)

Vice-President: Dr. Susumu Nishigaki (National Institute of Agricultural Sciences, Tokyo)

Vice-President: Mr. Naotaka Saga (Tokyo Fertilizer Inspection Office, Tokyo)

Secretary-General: Dr. Tatsuhiko Suzuki (National Institute of Agricultural Sciences, Tokyo)

Sociedad Mexicana de la Ciencia del Suelo

The following members were elected to serve on the board of the Mexican Society for the years 1968 and 1969:

President: Dr. Roberto Nùñez E.

Vice-President: Dra. Ma. Luisa Ortega D.

Secretary-Treasurer: M. C. Manuel Anaya G.

Assoc. Secretary-Treasurer: Ing. Jorge Alacòn C.

The third Mexican Congress of Soil Science

The third Mexican Congress of Soil Science was held at Chapingo, México and México City on October 16—18, 1967. Sixty papers were presented covering the fields of Soil Morphology and Classification, Plant Nutrition, Soil-Physics, Soil Chemistry, Soil Fertility, Water-Soil-Plant-Relations, Soil Conservation and Soil Biology. The proceedings of the Congress are in the press.

Proceedings of the 1st and 2nd Mexican Congresses of Soil Science. The proceedings of the First Mexican Congress of Soil Science held in 1963 contain 42 papers covering the different areas of Soil Science. Most of them refer to original research works conducted on Mexican soils. One volume with 473 pages, in Spanish. Price: 50 Mexican pesos (4 U.S. Dollars).

The proceedings of the Second Mexican Congress of Soil Science held in 1965 contain 56 research reports on different aspects of Soil Science conducted by Mexican Soil Scientists. Two volumes with a total of 1002 pages in Spanish. Price: 100 Mexican pesos (8 U.S. Dollars) the 2 volumes.

Both proceedings are available from:

Ing. Manuel Anaya G., Secretario - Tesorero
Sociedad Mexicana de la Ciencia del Suelo
Apartado Postal No. 45
Chapingo, Edo. de México
Mexico

Soil Science Society of the Netherlands

The Board elected on April 1968 consists of the following Officers:

President: Prof. Dr. W. H. van der Molen, M. Agr. Sc.
Vice-President: H. Kuipers, M. Agr. Sc.
Secretary-Treasurer: Dr. P. J. Ente, M. Agr. Sc.

The address is: P.O. Box 5, Kampen, Netherlands.

The Marbut Memorial Slides

The Soil Science Society of America has taken the initiative to prepare a collection of color slides of American soil profiles. They represent all of the ten orders of the 7th approximation of the USDA soil classification system. The set consists of 80 slides, including title slide and landscapes.

Orders may be sent to: Mrs. Elizabeth Deakman
SSSA, 677 South Segoe Road
Madison, Wisconsin 53711, U.S.A.

The price is \$ 28. For insurance add \$ 1.

NEWS OF THE COMMISSIONS

Commission V

Meeting of the European Working Group of the Subcommittee on Salt Affected Soils of ISSS Novi Sad, 21—24 May 1968

The Meeting was convened by the subcommission on Salt Affected Soils of the ISSS for the discussion of the problems that did arise during the preparative work for the European Salt Affected Soils Map carried out by: Austria, Bulgaria, France, Greece, Hungary, Italy, Portugal, Romania, Spain, Tchechoslovakia, USSR and Yugoslavia.

The Meeting was attended by fifty participants. The Faculty of Agriculture of the University of Novi Sad acted as host. Dr. I. Szabolcs led the discussions which concentrated on three main points:

1. The scale on which the European map would, in first instance, be constructed.
2. The mapping-units to be used.
3. The problems of amelioration of the solonetz and solonetzic soils of Europe.

Sub. 1. It became clear that sufficient information is available to construct a map on the scale 1 : 2,500,000. This will be transferred, in the final stage, to the Salt Affected Soils Map of the World on the scale 1 : 5,000,000.

Sub. 2. The following subdivision was adopted for the salt affected soils of Europe:

- A. A class dominated by chlorides and sulphates. This class is to be called: **saline**.
- B. A class dominated by exchangeable sodium and/or by sodium bicarbonate and/or sodium carbonate. This class is to be called: **alkali**. It is subdivided in:
 - a) a sub-class without structural B horizon
 - b) a sub-class with structural B horizon
 1. solonchak-solonetz and calcareous solonetz
 2. non calcareous solonetz with A horizon < 15 cm
 3. solodized and/or deeply leached solonetz and solod
 4. solonized and slightly salt affected soils with minor structure formation

Sub. 3. Existing evidence shows that salt affected soils react differently on amelioration practices. It has been found that in as yet unpredictable circumstances the amount of applied reclamation material which leads to an often striking improvement of soil conditions strongly, be in various degrees, deviated from the theoretical quantity calculated after the widely used equations of Gedroiz a.o.

Therefore it was decided that an inter-european field experiment, combined with appropriate laboratory research, be established in order to study both the practical and theoretical aspects of the inherent amelioration problems.

Dr. Gh. Sandu, Institute for Land Reclamation and Soil Science at Bucharest, Romania, was appointed Chairman of a Working Party which will take charge of the elaboration of this theoretical as well as practical project.

Two days of excursions followed the Meeting with discussions on genesis and amelioration of the solonetz soils in the Danube-Tisza depression.

As a conclusive result it was felt that if the European project would meet with the expected success, extrapolation and systematization with a view to the classification of salt affected soils on a world-wide scale should be considered.

The sub-commission also met on August 11, 1968 at the occasion of the 9th International Congress at Adelaide. The results obtained since the Budapest meeting of October 1967 were discussed. Representatives of Australia, Asia, Europe, U.S.A., U.S.S.R., FAO and UNESCO participated in the meeting. Dr. Bower (U.S.A.) presented a first draft of the Saline Soils Map of U.S.A. and Canada, the Mexican region not yet being available. Dr. Northcote (Australia) reported on the advances made in drafting the Saline Soils Map of Australia, mentioning that many more information was available than was to be represented according to the agreed upon

legend. It was, however, doubted that on a 1 : 5 million scale map more data could be shown. Dr. Szabolcs (Hungary) displayed a completed 1 : 2.5 million S.A.S.-map of Europe (excluding U.S.S.R.) and a detailed map 1 : 500.000 of Hungary as a key-map. Dr. Egorov (U.S.S.R.) reported on the joint efforts now made and informed the meeting that a 1 : 2.500.000 map would be available by the end of 1968 or early 1969. Dr. Kanwar (India) who only recently had assumed responsibility for constructing the S.A.S.-map of Asia, told the meeting that no advance as yet has been made and that more detailed instructions were needed. On the suggestion of Prof. Kovda (chairman Commission V) it was decided that UNESCO's Handbook on Drainage and Irrigation should be used as guide for the final elaboration of the maps. Other conclusions were:

- (i) Areas with less than 20% of salt affected soil were to be indicated by signature.
- (ii) Non-agricultural salt affected land (waste land) was to be delineated on the map.
- (iii) The Regional Officers should send all available information to Dr. Szabolcs, Chairman of the Sub-Committee, Soil Research Institute of the Hungarian Academy of Sciences, Herman Otto-ut 15, Budapest, Hungary, not later than January 1969. He then would try to integrate the information received on the map of Salt affected Soils to be presented at the Meeting in Erevan, Armenia, in May 1969.



The FAO/UNESCO Soil Map of the World on display at the 9th International Congress of Soil Science, Adelaide, Australia



Prof. V. A. Kovda, President of Commission V and Dr. R. Rudal, Soil Correlator of the World Soil Resources Office, FAO, in action at the special session devoted to a discussion on classification and nomenclature of the Soil Map of the World.

**INTERNATIONAL CONFERENCES
OF ALLIED INTERNATIONAL ORGANISATIONS
CONGRES INTERNATIONAUX DE SCIENCES CONNEXES
INTERNATIONALE KONGRESSE VON VERWANDTEN WISSENSCHAFTEN**

International Commission on Irrigation and Drainage

The Czechoslovak National Committee of the ICID is preparing the International Water Erosion Symposium to be held in Czechoslovakia in 1970 after the meeting of the Executive Council of ICID in Turkey.

The following program is envisaged:

Introduction: Water erosion and the nourishment of man.

Themes: 1. *Theory of the surface water runoff.*

2. Relation between the surface runoff, loss of soil and erosion factors.

3. Theoretical basis to the design of erosion control measures.

For further information apply to:

**Prof. Ing. Dr. Milos Holy, Dr Sc.,
Chairman of the Czechoslovak NC ICID,
Siroká 5, Praha 1, CSSR.**

**Third International Working-Meeting on Soil Micromorphology
Wroclaw, Poland, September 22—28, 1969**

The first Working-Meeting in Braunschweig-Völkenrode 1958, prepared by Prof. Dr. H. Frese and Dr. H. J. Altemüller, and the second Working-Meeting in Arnhem 1964, prepared by Dr. F. W. G. Pijls, Dr. J. Schelling and Dr. A. Jongerius were particularly successful and showed a remarkable increase in interest.

This time the undersigned is charged with the organization of the Third Working-Meeting on Soil Micromorphology in Poland 1969. This will be held in Wroclaw from 22 to 28 September and will comprise a conference and an excursion.

The conference (September 22—25) will be devoted primarily to the following subjects:

1. Micromorphological effects of the microflora and fauna of soil in humus formation.
2. Micromorphology and chemistry of the decomposition products of plant residues in different soil types and humus forms.
3. Micromorphology of weathering of soil minerals under different environmental conditions.
4. New contributions to the micromorphology and micromorphogenesis of soil formations.
5. New techniques and applications of micromorphology and micromorphometric soils analysis.
6. Results of micromorphologic analysis as indicators of soil fertility.
7. Applications of micromorphologic investigation to paleopedology.

The conference, like that at Arnhem, will be combined with an exhibition which will comprise the entire field of micromorphology and micromorphometry.

The excursion (September 26—28) will be devoted to showing special characteristics of such soils as black earths, chernozems and rendzinas in the south-western parts of Poland.

We invite all colleagues and friends of soil micromorphological research to attend our Working-Meeting. We ask furthermore all collaborators working in different branches of micromorphology to prepare contributions for the conference, to contribute to the exhibition (black and white and coloured enlargements of microphotographies, models, apparatus, implements, preparations, presentations of investigations, articles from periodicals etc.) and to demonstrations in the different branches of field research.

In connection with the organization of the meeting those who are interested are requested to send as soon as possible a notice of intent and provisional title(s) of paper(s) to the Organizing Committee at the following address:

**Prof. Dr. Stanislaw Kowalinski
Department of Soil Science
Agricultural College
Wroclaw, Poland, Norwida 25**

MISCELLANEOUS NEWS — INFORMATIONS DIVERSES
VERMISCHTE MITTEILUNGEN

FAO/Unesco Soil Map of the World Project

On Tuesday, 13 August 1968, a morning session of the Congress was devoted to the presentation of the first draft of the FAO/Unesco Soil Map of the World. The meeting was presided by Dr. E. G. Hallsworth, President of the International Society of Soil Science and of the Congress, in the presence of Professor F. A. van Baren, Secretary-General of the Society.

Dr. Hallsworth opened the meeting and underlined the importance of a world wide inventory of soils with regard to the need for food for the growing populations. He also stressed the importance of reaching more uniformity in soil nomenclature and soil classification.

Dr. Bramao, Chief of the World Soil Resources Office of FAO, presented a progress report on the Project and commented on the activities which had led to the preparation of the different continental soil maps. He also elaborated on the prospective uses which will be made of this map.

Professor V. Kovda, Chairman of Commission V of the Society, spoke on the history and background of the project. He emphasised the role of international soil correlation for the further development of soil science.

Dr. M. Batisse, Chief of the Natural Resources Division of Unesco, explained how this project fitted in the Natural Resources Programme of Unesco's environmental studies carried out within the general framework of the study of the biosphere.

Dr. R. Dudal, Soil Correlator, World Soil Resources Office of FAO, introduced the definitions of soil units used for the Soil Map of the World, and explained the basic principles which underlie the classification and the nomenclature used.

Several representatives who had helped prepare the maps for the various continents commented briefly on the maps of the different regions.

During the discussion period which followed, the project received general support, not only for its value as an inventory of world soil resources and as a means of transference of information and experience between regions far apart, but also for its scientific and educational significance. Furthermore recognition was given to the contribution made towards a more uniform approach to soil classification and nomenclature.

On 8 August an evening session was devoted to the discussion of a **uniform** system for soil horizon designations, and on 14 August a special technical session on the definitions of soil units was held under the chairmanship of Professor Kovda. The discussions were moderated by Dr. Dudal. During these meetings the general principles underlying the classification and the nomenclature used were discussed, and the different units were reviewed one by one. Numerous suggestions for adjustments and improvements were made but the proposed scheme was adopted in principle for use in the preparation of a general soil map of the world. The modifications proposed will be incorporated in the final draft of the legend. With regard to the horizon designations a reworked draft will be published in the Bulletin of the Society.

At the conclusion of the session the meeting adopted a resolution put forward by Professor van Baren, expressing appreciation to FAO and Unesco for the outstanding work carried out in the implementation of the project, and recommending that the Soil Map of the World be made available in printed form, together with an explanatory text and reliability map, as soon as possible and certainly before the 10th International Congress of Soil Science. It was also suggested that prior to the publication international consultation be sought regarding nomenclature and the cartographic aspects of the work.

BURINGH, P. Introduction to the study of soils in tropical and subtropical regions. pp. 118. 5 col. pict. Centre Agric. Publish. & Docum. Wageningen, Netherlands. 1968. Price Dfl. 12.50 (\$ 3.50).

This concise review is intended as an introduction in tropical and subtropical soils for undergraduates of the Agriculture University at Wageningen. It indeed does not present more than it was aimed at: to give an overall rather general picture of the genesis, properties and characteristics of the soils discussed, including their distribution, classification and agricultural potentialities. After a general introduction the eight following sections discuss: 1. arid and semi-arid soils; 2. halomorphic soils; 3. ferrallitic soils; 4. ferruginous soils and tropical podzolic soils; 5. tropical alluvial soils; 6. vertisols; 7. andosols and other volcanic soils and 8. some other tropical and subtropical soils. Although giving a lot of interesting general information one wonders whether the incorporation of soil profile descriptions and chemical data would not have contributed substantially to the informative value of the text. A few inaccuracies occur. Ferrallitic better be written ferrallitic, whereas Buchanan's term laterite was derived from the Latin root "later" which means brick, and not so named because the bricks were called "later". These remarks do, however, not distract from the opinion that as a general introduction for undergraduates the booklet serves its purpose.

PELISEK, J.: Vertikale Bodenazonalität von Mittel-Europa. Academia Nakl. Československé Amadema Věd. Praha, 1966, pp. 342 with German summary.

This volume treats the vertical soil zonality (toposequence) of Middle Europe. On the mineral-poor and medium mineral-rich rocks of the Bohemian Massif and in the Carpathian Mountains the following zonality can be found:

1. semi-gley and gley soils, lowest region
2. chernozems (200—300 m)
3. brown soils (150—350 m)
4. podzols (250—550 m)
5. ochrous forest soils (400—1100 m)
6. rusty-brown forest soils (700—1200 m)
7. chestnut-brown mountain forest soils (1200—1500 m)
8. humus mountain podzols (900—1800 m)
9. chocolate-brown mountain meadow soils (1500—1900 m)
10. grey-black mountain meadow soils (1900—2000 m)
11. rock debris (1800—2200 m)
12. bare rock (2000—2200 m)

From this sequence may be a.o. concluded that the lower limit of the Humus Podzols in Czechoslovakia shifts from West to East to higher altitude. Many more important geographic differences are mentioned which makes the German review interesting reading. It is therefore a pity that in the summary there is no reference to tables, graphs and pictures. This would have added to a better understanding of this Czechoslovakian textbook.

FLOREA, N., MUNTEANU, I., RAPAPORT, C., CHITU, C., OPRIS, M.: Geografia Solurilor Romanici. Editura Stiintifica, Bucurest, 1968, pp. 508, with rainfall and soil erosion map 1 : 2.500.000.

Only the contents in English gives an impression of the material discussed in this Soil Geography of Rumania. This is a pity as notably the 289 pages of chapter III: Characterization of the major soils of Rumania undoubtedly contains information which would interest the student of soil science even if he is not familiar with the Rumanian language. For readers with a classic background (Latin) the text is however sufficiently legible as may prove the one example that "Cernoziomurik levigate" clearly means "leached chernozem". For the rest the 1964 Soil Science Dictionary should solve technical linguistic difficulties.

OBITUARY — NECROLOGIE — NEKROLOGIE

Prof. Dr. M. Kwinichidze †

(1889—1968)



On February 8, 1968, passed away Professor Dr. M. Kwinichidze, Honorary Vice-President of the Polish Society of Soil Science and long-time President of the Poznan Branch of the Society. Active and highly deserving member of the Vth Commission on Genesis, Classification and Cartography within the Polish Society of Soil Science and President of the Committee for Natural Soil Regionalisation in Poland, he also was a member of the editorial staff of "Roczniki Gleboznawoze", Fellow of the Committee of Soil Science and Agricultural Chemistry of the Polish Academy of Sciences and member of the International Society of Soil Science.

Professor Kwinichidze was born in Vitebsk, USSR, in 1889. He undertook studies in the physics and mathematics faculty in Kiev but was not able to complete them because of his political engagement. From 1914 until 1920 he took part in World War I and then went to Poland where he engaged in work in the Chair of Soil Science, University of Poznan. At the same time he studied agriculture in the Agriculture Forest Faculty of the Poznan University. In 1926 he received the diploma of engineer in agriculture and the position of senior assistant. In 1933 he got his doctor's degree in agricultural sciences with specialization in soil science. During the German occupation he worked as a junior scientific worker in the University of Poznan. In 1945 he was called to the post of Assistant Professor in the Chair of Soil Science. In 1951 he was granted the title of lecturer and nominated Head of the Chair of Soil Science, University of Poznan. In 1954 he became extraordinary Professor and in 1959 ordinary Professor.

During many years he was engaged in the mapping of the soil of the Poznan province. He was a co-author of the first map of soils of Poland, and received for his participation in this project the IIIrd grade State Award.

Apart from teaching, he worked scientifically in the field of plant nutrition experiments and studied genetic processes in various soils, particularly podzolic and hydro-morphic. He wrote more than 60 reports and scientific papers, the majority of which were concerned with the mapping of soils. He was a co-author of the first fundamental text book entitled "Genetic Classification of soils in Poland".

Professor Dr. M. Kwinichidze was a follower of the Poznan soil scientific school of Professor Dr. Terlikowski. He worked until the last moment of his life. For his scientific and social activities in the Polish Society of Soil Science, the Gold Medal of the Society was awarded to him.

Prof. Dr. L. Królikowski
President of the Polish Society
of Soil Science

Theodore Stanley Coile † (1908—1968)

Dr. Theodore S. Coile, former professor of forest soils at Duke University, died March 24, 1968, at his home, Laurel Ridge Farm, Orange County, North Carolina.

He was born in Hardin County, Ohio, attended the Hardin County schools and obtained the Bachelor of Science degree at the University of Michigan in 1933. He received his graduate degrees at Yale University in 1935 and 1939.

He served with the Marine Corps from 1943 to 1945 as planning officer in engineering phases of combat operations. In 1963 he was principal consultant to the U.S. Army Transportation Board for studies of mobility of military vehicles in the tropics.

He was a member of the faculty of the School of Forestry at Duke University from 1935 to 1953 and founded the soils laboratory there. He also worked throughout the U.S. at the various experiment stations of the U.S. Forest Service.

During his research career Dr. Coile was author or co-author of some 50 articles or books on topics in soil science, forestry, and mobility of military vehicles.

At the time of his death he was a consultant to many forest industries in the South.

Professor Dr. Jadwiga Ziemiecka †
(1891—1968)

On 13 March 1968 passed away Professor Dr. J. Ziemiecka, one of the Founders and first Secretary of the Polish Society of Soil Science. She was a member of the Vth Commission on Genesis, Classification and Cartography of the Polish Society of Soil Science; a member of the editorial board of "Roczniki Gleboznawoze"; a member of the International Society of Soil Science; a Honorary Fellow of the Polish Society of Microbiologists; a member of the Polish Academy of Sciences and of its Committee of Soil Science and Agricultural Chemistry.



Jadwiga Ziemiecka was born in 1891 in Warsaw. She completed her academic education at the Jagiellonian University in Kraków. In 1914 she received the title of doctor in philosophy on the base of the thesis entitled "The occurrence of Azotobacter in soils". She further specialized in the field of soil microbiology in the laboratory of Prof. Winogredzki in Paris (1929). Conjointly with him she published numerous scientific papers. Out of these, the paper on "the microbiological method of the determination of fertilization requirements of soils" distinguished itself by its outstanding importance. This method was later commonly used.

She took her doctor degree at the University of Poznan in the Chair directed by Prof. F. Terlikowski. At the State Scientific Institute of Agriculture at Pulawy she founded the first laboratory of Soil Microbiology, reorganized later into a section and was its Head until the last moments of her life. Numerous later microbiologists obtained their education in this section. During the war she stayed at Pulawy and with great courage and devotion tried to protect the scientific production of the Institute.

In 1945 she took an active part in the formation of the Maria Curie-Skłodowska University in Lublin, and from 1956—1962 she was a head of its section of General Microbiology. Her scientific interests included: a) selection of adequate techniques in soil microbiology; b) fixation of free nitrogen and c) effect of microorganisms upon soil fertility and plant nutrition. She was the first in Poland who introduced the vaccine of symbiotic bacteria to agricultural practice. This was a real achievement in agricultural management and it was on her initiative that, in 1956, the production plant of vaccines for papilionaceous plants (nitrogen) was organized in Poland.

Her scientific production amounts to 150 publications, including 6 handbooks. For her merits in scientific, didactic and social activities she was honoured on two occasions with the Gold Cross of Merit, Order of "Szrandar Pracy" of the IIInd class, State Award of IIInd grade, Commandery Cross of the Order Polonia Restituta, and in the Polish Society of Soil Science with the Society's golden medal.

Prof. Dr. L. Królikowski
President of the Polish Society
of Soil Science

Professor Dr. J. Tomaszewski †
(1884—1967)



On December 7, 1967 died the senior of Polish soil scientists, Honorary Member of the Polish Society of Soil Science, the Wrocław Branch of which he had presided for many years, member of the Vth Commission on Genesis, Classification and Cartography of the Polish Society and Chairman of its member court, member of the editorial board of "Roczniki Gleboznawcze", member of the Committee of Soil Science and Agricultural Chemistry of the Polish Academy of Sciences and Doctor Honoris Causa of the Higher Agricultural College in Olsztyn.

Professor Dr. Jan Tomaszewski was born on 30 December 1884 at Jancewicze in Polesie. After obtaining his degree in the Faculty of Forestry, Institute of Agriculture and Forestry at Pulawy, he left for Russia where, during the years 1910—1923, he worked as soil scientist-hydrologist in Tashkent, Caucasus, and other locations.

From 1923 until 1945 he worked in the State Research Institute at Pulawy; afterwards, during twenty years, he was Professor of the University of Wrocław and, following the reorganization of agricultural colleges, of the Higher Agricultural College at Wrocław. His most important scientific contributions dealt with the reclamation of marshy soils. In his work the classification of these soils is given. He also wrote numerous reports and scientific papers in the sphere of soil science and prepared a draft of the systematics of the classification of soils of Poland and of the world. Later he became interested in the dynamics of soil processes, organic matter in soils and in the typology of soils of Poland.

Professor Tomaszewski was the author of 66 scientific and popular papers and a handbook of soil science, entitled "Soil Science". Under his redaction the team of Polish soil scientists prepared the first map of Poland's soils in a scale of 1 : 1,000,000, for which he was granted the IIIrd grade State Award. For outstanding merits in the field of scientific and social activities he was honoured with the Gold Medal of the Polish Society of Soil Science.

Professor Dr. J. Tomaszewski was an exceptionally active and inventive soil scientist, working until the last moment of his life.

Prof. Dr. L. Królikowski
President of the Polish Society
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