

Discussion

Dr. E. Grossbard was invited to open the discussion. After congratulating Prof. Fletcher on his address she went on to describe the work being started at the Weed Research Organisation on the effect of herbicides on the soil micro-organisms and indirectly on soil fertility. At present no work is planned to study the effect of micro-organisms on herbicide decomposition in the soil.

The programme is concerned with:

1. Long-term experiments in which the effect of repeated applications of MCPA, tri-allate, linuron and simazine on microbial activity is measured by means of carbon dioxide (CO₂) production and nitrification.
2. As part of the evaluation programme the effects of both new and established herbicides on soil micro-organisms are being studied.

In the long-term experiment the herbicides are applied at the normal dose to cropped fields and at three or four times the normal dose to uncultivated weed-free plots. The results confirm Prof. Fletcher's statements to a large extent. In 1965 the CO₂ output was not inhibited on the un-cropped plots and in fact linuron caused a statistically significant stimulation at one sampling date. This stimulation does not appear to have been repeated in 1966.

In the MCPA plots there was a marked increase in CO₂ output one month after application in 1966 that did not occur in 1965. This suggests the build-up of microflora capable of utilizing MCPA and fits in well with Kirkland and Fryer's findings reported at this Conference (p. 616) that MCPA is broken down more rapidly in soil that has received several previous applications of MCPA than in un-treated soil.

Tri-allate appeared to have no effect, but in both years there was a greater output of CO₂ in September when most of the tri-allate had disappeared from the soil. This could suggest a delay in the microbial utilization of the herbicide. Another field experiment concerned with the effect of simazine at doses varying from 1-16 lb/ac showed no significant inhibition of CO₂ production in 1965.

In the evaluation studies on the newer herbicides again CO₂ output was used to assess microbial activity. In laboratory experiments based on the incubation of soils treated with the herbicides for various periods of time, the very high concentration of 500 ppm was used on the assumption that if a herbicide does not inhibit microbial activity at this concentration it can be considered safe and excluded from further tests. Preliminary results suggested that although at 500 ppm most herbicides did reduce CO₂ output the extent of inhibition was very low and in some cases transitory. Even propanil which caused the greatest degree of CO₂ suppression among the herbicides studied, showed a gradual lowering in the inhibitory effect with time. Endothal appeared to stimulate CO₂ production but this effect decreased with time indicating that endothal was broken down very rapidly and the products used by the microflora as nutrients.

The effect on nitrification has been used to measure microbial activity in the long-term experiment and in experiment with simazine. In 1965 there was no significant inhibition and at one sampling date stimulation was recorded.

Nitrification is regarded as the microbial activity most sensitive to herbicidal action. Most reported work has been done by means of the soil perfusion technique

which "bathes" soil particles and the microbial cells attached to them, in the herbicide solution. But such intimate contact does not occur either in the field or in incubation experiments with normal soil. The perfusion method is useful for the preliminary screening of herbicides in laboratory experiments but for field experiments the determination of the mineralization of nitrogen in soil incubated by the standard methods of soil analysis seems preferable. There are, however, instances where analogies could be drawn from the results obtained by the soil perfusion technique and those obtained by field experiments. For instance in the case of amino-triazole where a reduction in nitrification was demonstrated first by soil perfusion techniques. Later Arnott and Clement at Hurley showed that the amount of nitrogen mineralised in a field treated with 10 lb/ac of amino-triazole was less than under a ploughed field. However, yields were not affected by this reduction in mineral nitrogen. Thus when appraising the effect of a herbicide on microbial activity it is important to consider whether a reduction, if it occurs, lowers yields and is thus of practical importance.

Mr. F. A. Roach described some work he did in the mid 1950's to compare 2,4-DES as a soil applied residual herbicide with MCPA, 2,4-D, MCPB and 2,4-DB applied to the soil at 1 and 2 lb a.i./ac. MCPB gave the best control of weed seedlings and he thought at the time that the longer period of seedling control may have been due to the conversion of MCPB to MCPA in the soil. 2,4-DB also proved more effective than 2,4-D.

Dr. W. van der Zweep commented that it may be possible to make more use of the effect herbicides have on nitrification because nitrite effects can kill small seedlings and also influence their susceptibility to herbicides. Professor W.W. Fletcher felt this was an interesting suggestion but thought the difficulty would be in controlling the process so that it did not get out of hand.

Dr. K. Holly referred to the possible effects of herbicides on rhizobia and asked what was the position of rhizobia in the soil in the absence of a leguminous plant and whether there would be any repercussions when legumes were grown in the soil at some future date. Prof. Fletcher replied that he and Mr. Alcorn (of the West of Scotland Agricultural College, Glasgow) had looked at the effect of herbicides on rhizobia and so far as they can see the herbicides that they have examined, mainly the substituted phenoxy acids, have, at agricultural rates, no effect on the rhizobia.

Dr. S. R. McLane asked if the stimulative effects of certain herbicides on microflora indicated that they were behaving as a source of nutrients or more as a catalyst. Prof. Fletcher thought they acted in both ways as it seems clear that both maleic hydrazide and dalapon can be used as substrate by the microflora but the fact that 2,4-D, at very low concentrations, can, on occasions, stimulate growth indicates that it may be acting as a hormone.

MINUTES OF THE GENERAL MEETING OF CONFERENCE DELEGATES HELD AT
3.15 P.M. ON THURSDAY, 24TH NOVEMBER, 1966 AT THE METROPOLE HOTEL, BRIGHTON

Present: Mr. W. Emrys Jones (President)
Mr. M. N. Gladstone (Chairman)
Miss C. B. Bloemink (Secretary)

together with about 30 members of the Conference

1. MINUTES OF DELEGATES' MEETING OF THE 1964 CONFERENCE

The Minutes of the meeting held at Brighton on 26th November, 1964, having been circulated, were taken as read and signed as a true record.

2. SUMMING UP OF CONFERENCE

In summing up the Conference Mr. W. E. Jones said:

"The task of summarising the proceedings of this Conference in 5 minutes is a formidable one. To do it adequately would be impossible and I shall not even attempt it.

There are, however, certain themes that have been apparent, at least to me, running through our Conference. Firstly, we have had sessions, now well established, at previous Conferences on the control of weeds in potatoes, in cereals, in sugar beet, in grassland, in fruit and in vegetables. To these have been added new sessions on industrial weed control and the control of aquatic weeds and, for the first time I think, we have had a session on application of herbicides and another on training in crop protection, an essential feature of the activities of the British Weed Control Council if we are to ensure an adequate supply of the technical manpower that the use of herbicides requires.

We have now reached the stage I feel, and it has crept up on us almost unnoticed by many, where herbicides have become accepted as an essential tool of modern farming methods. The revolution is indeed over and the new regime of herbicides is firmly established. They have become part of our normal way of life. This is reflected in our Conference by the increasing attention that we are paying to the effect of herbicides in the agricultural environment. The persistence of herbicides in the soil is clearly an important problem where increasing amounts of herbicides are being used on a regular annual basis and I need hardly remind you that the sale of herbicides has been expanding over the last five years at an enormous rate and now amounts to almost twice that of all other pesticide chemicals. So persistence in the soil and microbiological breakdown in the soil are important factors as are also the behaviour and metabolism of herbicides in weeds and in crop plants. I feel sure that as the industry continues to expand, we shall need to have more and more comprehensive information on the behaviour and persistence of herbicides in the environment.

This Conference has been a forward looking one in that it has identified some of the major trends in farming practices. It has also discussed some of the pressures that are likely to influence farming systems. Mr. John Jenkins, in declaring his current problems, emphasised the need to develop practices which would help him overcome high capital requirements and a declining labour force. Simplification and specialisation of farming systems will obviously demand technical precision and forward planning. He was therefore interested in developments in minimum cultivation techniques. Indeed the Conference had interesting discussions on this subject, and we were relieved to see that a considerable amount of development work is in progress.

There is every indication that the volume of cereal production will grow and already there are signs that we could well have a million more acres in the next few years. Continuous cereal growing is already creating problems, and the question of appropriate and economic break crops will surely be an important subject at our next Conference in two years' time. In my view we should in the meantime actively study field beans and oil seed rape as possible break crops.

In all the sectors of British agriculture the utilisation of grassland is probably the least efficient. Here we have 17 million acres of land not pulling its weight and we have yet to find the true role of herbicides on various systems of grassland management. There are already existing research possibilities on the horizon and new approaches and new attitudes developing towards the exploitation of the grass crop. I am sure that the next two years will produce developments of considerable interest in this area of British agriculture.

It only remains for me to thank the Chairman and all those who have been associated with him in organising this Conference for their inspiring and voluntary efforts.

3. ELECTION OF PRESIDENT

Mr. Gladstone stated that, in accordance with Council's Constitution, Mr. W. E. Jones, the President, retired from Office at the end of the Conference. He moved a vote of thanks for Mr. Jones' support over the past two years and particularly for the way in which he had wholeheartedly involved himself in the Conference.

Mr. Gladstone, in asking for nominations for the office of President stated that Mr. Jones offered himself for re-election. Mr. A. W. Billitt proposed the re-election of Mr. Jones as President of the British Weed Control Council for the next two years and the proposal was seconded by Mr. J. D. Fryer. In the absence of any other nominations Mr. Jones was, with acclamation, declared President of the British Weed Control Council until the conclusion of the 1968 Weed Control Conference.

4. SECRETARY'S REPORT ON THE ACTIVITIES OF THE COUNCIL SINCE THE 1964 CONFERENCE

The Secretary's Report had been circulated to all Conference delegates. Dr. E. C. S. Little moved the adoption of the Report; this was seconded by Mr. H. S. Leech and carried unanimously.

5. SUGGESTIONS FOR FUTURE ACTIVITIES OF THE COUNCIL

Mr. Gladstone invited suggestions as to ways in which the Council should direct its future activities. He also invited comments on the Conference just ended and said that ideas to improve the running and organisation of future Conferences would be welcomed.

Dr. E. C. S. Little of the Weed Research Organisation commented on the great improvement in the slide projection; this, in his opinion, had been excellent. He also thought the time for discussion at the various sessions had been adequate. Mr. Gladstone however reported a criticism from a Conference delegate, not present at the meeting, that some of the slides could not be read, particularly from the back of the Conference Rooms, and the feeling was that too much information was put on the slide so that delegates had difficulty in absorbing the information in the short time the slide was shown. Dr. Little referred to his suggestion made at the previous Conference Delegates' meeting that contributors should be given clear instructions regarding the correct type of slides and wondered if it had been followed up. Mr. J. D. Fryer stated that Session Organisers had requested slides in advance so that they could be "vetted." However, it was not always possible to ensure that they were up to standard. Efforts would continue to be made at future Conferences to improve

the standard of the slides. The idea of stipulating a slide to conform to a standard specification would be investigated.

Dr. Little once again raised the subject of tropical weed control. He appreciated that it had not been possible at this Conference, owing to the already crowded Programme, to provide a Session on this subject, but he made a plea that this matter should be kept before Council. He felt it was the Council's duty to provide a platform for presenting the large amount of data available from many countries on tropical weed control and to stimulate discussion on the problems. He asked that Council should consider including a concurrent session on this subject at the next Conference or, alternatively, consider the holding of a separate Symposium on tropical weed control. Mr. Fryer expressed sympathy in this connection but said that the Programme Committee had felt that the Programme was so full already with British and European topics that it was simply not possible to include this subject within the scope of the existing Conference. The idea of holding a separate one-day Symposium posed the problem of getting the experts from other countries to come long distances to attend for so short a period. The matter would however be kept in mind and the question of including it in a future Conference Programme would be re-considered if further support for the proposal was forthcoming. Dr. K. Holly and Mr. J. G. Elliott, both of the Weed Research Organisation, supported the idea of a one-day Symposium on "Tropical Weed Control".

Mr. Elliott felt that, apart from this particular subject, there was a strong case for Council holding many more one-day Symposia to deal with matters of weed control in this country, particularly to cater for the rather more research and scientific aspects.

Mr. K. W. Hole of Velsicol International Corporation, C.A. suggested that the use of alphabetical lists would greatly simplify and clarify the problem of table identification at the Banquet.

Mr. Hole mentioned a failure of the Public Address equipment and Mr. Fryer stated that the trouble seemed to be confined to the Clarence Room. It was noted that the staff dealing with both projection and amplification had in fact been extremely helpful during the period of the Conference.

Mr. Hole felt that consideration should be given to extending the duration of the Conference for an extra day. He felt that this would give several advantages - sessions could be made a little more flexible and more time allowed for discussion. The Programme could be divided into sections so that delegates wishing to attend on a particular day could do so; in this way many more people could attend. He appreciated the administrative difficulties involved but asked that consideration be given to the proposal. Mr. H. S. Leech suggested that the Conference could assemble on the Monday morning instead of the evening which would allow the Programme to be extended for at least an additional half day.

Dr. W. van der Zweep of I.B.S., Wageningen, Holland expressed his thanks to the Council for its support of the work of the European Weed Research Council. He stated that the contributions of foreign delegates at this Conference had been somewhat hampered by the language difficulty. Foreign delegates were of course able to make contacts in between sessions but this did not wholly overcome the problem. He suggested introducing into a future Conference one or two sessions on topical important in European countries and making arrangements at these sessions for simultaneous translations. He thought that the E.W.R.C. and B.W.C.C. should co-operate in developing this idea. The simultaneous translation method was used at all meetings of the E.W.R.C. However, it was costly - of the order of £1,000 per day. The difficulty of foreign delegates was appreciated and it was agreed that the matter was certainly worth considering. Mr. Fryer supported the suggestion and urged that all facilities should be made available to overseas delegates in view of the fact that

they now represented one-third of the attendance at British Weed Control Conference and made a very good contribution both in terms of scientific work and liaison with industry. The introduction of simultaneous translation, in his opinion, would make the Conference more viable and better value. Dr. Little suggested that an Overseas Delegates' Room with interpreters on hand to give information, ask questions etc. might be available.

Mr. N. H. Goodman of May & Baker Ltd. drew attention to the interesting session on "Training in Crop Protection" and considered that this was so important a subject that it should be expanded on at the next Conference or be made the subject of a one-day Symposium. He said that industry was doing an enormous amount of work in training of this nature at the agricultural merchants level. He felt however that the training given by industry was somewhat fragmented and the education and training of agricultural merchants for instance should be placed on a proper basis and undertaken by an official body. A one-day Symposium on training in crop protection to integrate all interests concerned and to point to the necessity for training at agricultural merchant level (which was not available at the moment, except through industry) was desirable. Mr. Leech supported this view and considered that the Institute of Corn & Agricultural Merchants would be pleased to co-operate. Mr. Hole expressed the view that if such a scheme were introduced it might be more practical for the experts to visit the various centres rather than have a centrally located Symposium.

Dr. Little said that many commercial firms were producing extremely interesting documentary films on herbicide control and put forward the proposal for holding a film evening at a future Conference where films could be shown and discussed. Mr. Gladstone said that the holding of an evening session had been discussed many times but the general feeling was that the free evenings gave delegates an opportunity to meet one another and it was felt that an evening session (included as part of the Programme) would result in a very poor attendance.

Mr. Gladstone thanked Conference Delegates for their presence and for the various suggestions put forward and said that due note would be taken of the points raised.

There being no further business, Mr. Gladstone then closed the Conference by expressing his thanks and appreciation to all those who had put in so much effort to make the Conference the great success it had been - Mr. Morris, Mr. Bishop, Mr. Leech, the secretarial staff and the Hotel staff were specially mentioned. He particularly thanked Mr. Fryer and the members of the Programme Committee who were in fact the architects of this highly successful Conference.

The meeting closed at 3.55 p.m.

SECRETARY'S REPORT

ACTIVITIES OF THE COUNCIL SINCE THE 7TH BRITISH WEED CONTROL CONFERENCE
23RD-26TH NOVEMBER, 1964

MEMBERSHIP OF THE COUNCIL

Changes in membership of the Council that have occurred are as follows:

President

At the 1964 Conference Delegates' Meeting at Brighton on 26th November, 1964, Mr. W. Emrys Jones was elected President of the Council for a term of two years up to and including the 1966 Conference in place of Sir Harold Sanders who had retired.

The Nature Conservancy

In March 1965 the Nature Conservancy accepted Council's invitation to become a member organisation and Mr. J. M. Way was nominated as its official representative.

National Farmers' Union

In June 1965 the National Farmers' Union appointed Mr. T. D. Dampney as its second official representative. Mr. Dampney has interests in both the agricultural and horticultural fields.

Association of British Manufacturers of Agricultural Chemicals

In June 1965 Mr. A. W. Billitt and Mr. D. J. S. Hartt resigned as A.B.M.A.C. representatives and were replaced by Mr. R. E. Ashworth and Mr. N. E. Williams.

Society of Chemical Industry

In December 1965 Dr. H. Martin resigned as the S.C.I. representative and in March 1966 Dr. B. J. Heywood, Chairman of S.C.I.'s Pesticide Group, was appointed as his successor.

Co-Option

In March 1966 Mr. A. W. Billitt was invited to become a co-opted member of the Council.

Officers of the Council

Mr. M. N. Gladstone and Miss C. B. Bloemink were re-elected as Chairman and Secretary of the Council respectively for a further period of two years. Mr. H. S. Leech was re-elected as Treasurer of the Council for a further period of two years.

Mr. W. A. Williams, Secretary of A.B.M.A.C., has been in attendance at Council meetings during the past two years.

A list of member organisations of the Council is given below, indicating the number of representatives nominated by each organisation:

The President

The Chairman

The Treasurer

	Representatives
Agricultural Research Council	2
Association of Applied Biologists	1
Association of British Manufacturers of Agricultural Chemicals	3
Department of Agriculture for Scotland	1
Ministry of Agriculture, Fisheries and Food, National Agricultural Advisory Service	2
Ministry of Agriculture, Fisheries and Food, Plant Pathology Laboratory	1
Ministry of Agriculture for Northern Ireland	1
Ministry of Overseas Development (formerly Department of Technical Co-operation)	1
National Association of Agricultural Contractors	2
National Association of Corn and Agricul- tural Merchants	1
National Farmers' Union	2
Nature Conservancy	1
Royal Agricultural Society of England	1
Society of Chemical Industry	1

Council Membership as at 21st November, 1966, is as follows:

President: MR. W. EMRYS JONES

Chairman: MR. M. N. GLADSTONE

Treasurer: MR. H. S. LEECH

Members

Mr. D. J. Allott - Ministry of Agriculture for Northern Ireland.
 Dr. R. de B. Ashworth - M.A.F.F.,
 Plant Pathology Laboratory.
 Mr. R. E. Ashworth - A.B.M.A.C.
 Mr. A. W. Billitt - (co-opted).
 Mr. W. F. P. Bishop - (co-opted).
 Mr. M. S. Bradford - N.A.C.A.M.
 Mr. R. Clements - M.A.F.F., N.A.A.S.
 Mr. C. V. Dadd - R.A.S.E.
 Mr. T. D. Dampney - N.F.U.
 Mr. S. A. Evans - M.A.F.F., N.A.A.S.
 Mr. J. D. Fryer - A.R.C.

Mr. R. G. Heddle - Department of Agriculture for Scotland.
 Dr. B. J. Heywood - S.C.I.
 Mr. R. E. Longmate - N.A.A.C.
 Mr. H. C. Mason - N.F.U.
 Mr. H. C. Mellor - A.B.M.A.C.
 Mr. F. W. Morris - N.A.A.C.
 Mr. D. Rhind - Ministry of Overseas
 Development
 Dr. D. Rudd Jones - A.R.C.
 Mr. J. M. Way - Nature Conservancy
 Mr. N. E. Williams - A.B.M.A.C.
 Mr. W. A. Williams
 Dr. E. K. Woodford - A.A.B.

Secretary: Miss C. B. Bloemink

Full meetings of the Council have been held quarterly.

Council Committees

The various Committees of the Council appointed to deal with special aspects of the Council's work, have met at intervals during the past two years. The present Committees with details of the membership of each are listed further on.

1966 Conference Organising Committee

The 1964 Conference Organising Committee was declared formally dissolved at the December 1964 Council meeting. The members declared their willingness to stand for re-election and were unanimously re-elected en bloc to run the 1966 Conference, Mr. F. W. Morris remaining Chairman of the Committee.

The period of co-option of Mr. W. F. P. Bishop (N.A.A.C.) as a member of the Council in his capacity as Secretary of the 1964 Conference Organising Committee terminated on 31st December, 1964. Mr. Bishop agreed to the extension of this period to 31st December, 1966 to cover similar duties as Conference Secretary in connection with the 1966 Weed Control Conference.

Subsequently, when Mr. J. D. Fryer took over Chairmanship of the Conference Programme Committee he automatically became a member of the Conference Organising Committee in place of Dr. E. K. Woodford.

Present Membership:

Mr. F. W. Morris (Chairman)
Mr. W. F. P. Bishop (Secretary)
Mr. C. V. Dadd
Mr. J. D. Fryer
Mr. M. N. Gladstone
Mr. H. S. Leech
Mr. H. C. Mason

1966 Conference Programme Committee

The 1964 Conference Programme Committee remained in office until the March 1965 meeting of the Council when it was declared dissolved. Mr. J. D. Fryer accepted Chairmanship of the 1966 Conference Programme Committee in succession to Dr. E. K. Woodford.

Present Membership:

Mr. J. D. Fryer (<u>Chairman</u>)	Prof. J. L. Harper
Mr. T. O. Robson (<u>Secretary</u>)	Dr. B. J. Heywood
Mr. R. E. Ashworth	Dr. K. Holly
Mr. R. F. Clements	Mr. K. R. Hubbard
Mr. G. W. Cussans	Mr. T. Laflin
Mr. C. V. Dadd	Mr. H. C. Mason
Dr. D. S. H. Drennan	Mr. D. Montgomery
Mr. J. G. Elliott	Mr. F. W. Morris
Mr. S. A. Evans	Mr. J. F. Ormrod
	Dr. R. K. Pfeiffer
	Mr. R. G. Powell

The Conference Organising Committee and the Conference Programme Committee are in close liaison during the two-year period before each Conference so that the work that goes into the administration of the Conference and the organisation of the Conference Programme is co-ordinated at every stage, in order to attain as high a standard of efficiency as possible.

Finance Committee

Present Membership:

Mr. F. W. Morris (Chairman)
Mr. H. S. Leech (Secretary)
Mr. M. S. Bradford
Mr. H. C. Mason

Investments

In December, 1964, following a suggestion from Council's Auditors regarding disposal of surplus Council funds, it was decided to place Council's reserves in long term investments. As a result of recommendations from a firm of Brokers, the Finance Committee, together with Mr. C. V. Dadd, was given the task of deciding on

Council's investment policy and taking any necessary action. Subsequently, on legal advice, an additional Clause was added to Rule 9 of the Council's Constitution to allow for the setting up of an Investment Committee of four Trustees with absolute discretion to apply or invest Council's funds. The Trustees appointed under the amended Clause were Mr. C. V. Dadd, Mr. M. N. Gladstone, Mr. H. S. Leech and Mr. F. W. Morris. The Council therefore now has complete freedom in the investment of its funds and the appointment of the Trustees ensures that quick action can be taken as and when necessary.

Handbook Committee

Present Membership:

Mr. J. D. Fryer (Chairman)
Mr. S. A. Evans (Vice Chairman and Secretary)
Dr. H. P. Allen (Imperial Chemical Industries Ltd.)
Mr. K. Carpenter (May & Baker Ltd.)
Mr. J. G. Elliott (Weed Research Organisation)
Dr. W. W. Fletcher (Strathclyde University)
Dr. K. Holly (Weed Research Organisation)
Mr. L. W. Osborne (National Agricultural Advisory Service)
Mr. H. A. Roberts (National Vegetable Research Station)
Dr. G. R. Sagar (University College of North Wales)

ex officio

Mr. D. Rhind (Chairman, Publications Committee)

Recommendations Committee

Present Membership:

Mr. J. D. Fryer (Chairman)
Mr. S. A. Evans (Vice Chairman and Secretary)
Mr. J. R. Aldhous (Forestry Commission)
Mr. D. J. Allott (Research Institute Loughgall)
Dr. J. G. Davison (Agricultural Chemicals Approval Organisation)
Mr. D. S. C. Erskine (East of Scotland College of Agriculture)
Mr. C. G. Finch (National Institute of Agricultural Botany)
Dr. K. Holly (Weed Research Organisation)
Mr. R. G. Hughes (National Agricultural Advisory Service)
Dr. G. W. Ivens (Weed Research Organisation)
Mr. D. Montgomery (Borax Consolidated Ltd.)
Mr. J. F. Ormrod (National Agricultural Advisory Service)
Dr. R. K. Pfeiffer (Fisons Pest Control Ltd.)
Dr. E. A. Riley (Plant Pathology Laboratory)
Mr. H. A. Roberts (National Vegetable Research Station)
Mr. T. O. Robson (Weed Research Organisation)

The Handbook Committee and the Recommendations Committee are complementary and deal entirely with the production of the Council's Weed Control Handbook. The work done during the past two years has largely been devoted to the preparation of the 5th Edition of the Weed Control Handbook in its new format which is to be produced in late 1967 and further details of which are given later in this Report.

Herbicide Application Committee

Present Membership:

Mr. F. W. Morris (Chairman)
Mr. S. A. Evans (Vice Chairman)
Mr. G. P. Allman (Agricultural Engineers Association Ltd.)
Mr. R. C. Amsden (Association of British Manufacturers of Agricultural Chemicals)

Mr. R. A. Burton (National Farmers' Union)
 Mr. J. B. Byass (National Institute of Agricultural Engineering)
 Mr. D. A. Harris (Association of British Manufacturers of Agricultural
 Chemicals)
 Mr. J. Holroyd (Weed Research Organisation)
 Mr. J. L. Hunt (Association of British Manufacturers of Agricultural
 Chemicals)
 Mr. J. Lucas (National Farmers' Union)
 Mr. R. F. Norman (National Association of Agricultural Contractors)
 Mr. E. J. Roworth (Agricultural Engineers' Association Ltd.)
 Mr. G. B. Shipway (National Agricultural Advisory Service)

This new Committee met for the first time on 25th October, 1965, and has since met twice more. The terms of reference of the Committee are to establish effective liaison between Council and manufacturers of spraying machinery and to ensure the constant inter-change of information between those concerned in the research, manufacture and use of herbicides and the equipment for their application.

The first action of the Committee was to draw up a list of application problems which appeared to warrant investigation. These have been studied in detail and at its third meeting on 12th May, 1966, the Committee formulated conclusions and recommendations for consideration by Council. The report of the Committee has highlighted problems of interest, e.g. the question of nozzles and swathe marking etc. The recommendations made were approved by the Council, and the Committee has taken steps to implement these. The Committee has also been asked specifically to look into the question of overdosing and to initiate positive action to get the appropriate organisations to design equipment in an attempt to resolve this problem which is particularly important in the case of soil acting herbicides. Another matter for investigation by the Committee is the question of horticultural sprayers for application of herbicides to small horticultural areas.

Joint B.W.C.C./B.I.F.C. Education and Communications Committee

Present Membership:

Mr. C. V. Dadd (Chairman)
 Mr. M. S. Bradford (B.W.C.C.)
 Mr. S. A. Evans (B.W.C.C.)
 Mr. M. N. Gladstone (B.W.C.C.)
 Dr. H. Gough (B.I.F.C.)
 Mr. D. J. S. Hartt (B.I.F.C.)
 Mr. H. C. Mason (B.I.F.C.)
 Mr. F. W. Morris (B.I.F.C.)
 Dr. T. W. Martin (H.M.I., Department of Education and Science,
 Ministry of Education) (co-opted)

This new Committee has taken over the activities started by the small joint B.W.C.C./B.I.F.C. Study Group which was set up in late 1963 to consider how the Councils could further education on the subject of herbicides, insecticides and fungicides. The most important result of the deliberations of this Study Group has been the stimulation of interest of responsible educational bodies, namely, the Department of Education and Science and, more directly, the Local Education Authorities, in putting on instructional courses for farm workers and employees of contracting firms in the safe use and application of agricultural spray chemicals. The first practical step in this direction was the organisation by the Department of Education and Science of an Instructors' Course (12th/15th April, 1965) at the National College of Agricultural Engineering, Silsoe, Bedford, for farm machinery lecturers. This Course, entitled "Safety in the use of Sprays", was considered by the participants to have proved helpful and instructive and Council felt that a use-

ful purpose had been achieved in prompting the Department of Education and Science into taking action on this aspect of education. With regard to the question of arranging further Instructors' Courses and short training courses and advanced training courses for operators as a follow-up to this first Instructors' Course, whilst this was the direct responsibility of the Department of Education and Science, the Committee have been active in an advisory capacity.

The joint Committee held its first meeting during November 1965 and as a first step arranged a further Instructors' Course entitled "The Safe Use of Chemicals in Crop Protection" which was held at the Essex Institute of Agriculture, Writtle, from 5th to 9th September, 1966. The Committee, in conjunction with the Department of Education and Science, drew up a Programme which, in the light of the experience gained from the first Instructors' Course, ensured that crop husbandry and machinery aspects were given equal attention.

43 teachers from the principal Farm Institutes and from Technical Colleges, representing some 40 counties in England and Wales, attended the Course. The Course was well received and had been very well organised. The programme proved to be most interesting - all shades of opinions were expressed and discussions had been stimulating. The teachers, it was felt had gone away with a clear objective and an appreciation of the value of short courses for operatives and of the need for further dissemination of information on the subject. Two recommendations emerged from the Course. One was the need for simplification of labelling and packaging of the products of chemical manufacturers, and the other was the need to resolve the problem of disposal of containers.

The Committee has also undertaken an analysis of examination syllabuses to ensure the inclusion of the subject of crop protection chemicals in the curricula of agricultural courses at all levels, from the Rural Schools and Schools of Agriculture, to Farm Institutes and Agricultural Colleges. The compilation of a list of standard literature on the subject of crop protection and the question of making available visual aids are also being investigated.

Publications Committee

Following the resignation of Mr. A. W. Billitt in June 1965 as an A.B.M.A.C. representative, the Chairmanship of this Committee fell vacant and Mr. D. Rhind was elected to the office.

Present Membership:

Mr. D. Rhind (Chairman)
Mr. H. S. Leech (Secretary)
Mr. J. D. Fryer
Mr. F. W. Morris

This Committee negotiates agreements with printers and publishers relating to the Council's publications, i.e. the Proceedings of British Weed Control Conferences, Symposia and the Weed Control Handbook.

An Agreement has been signed with Blackwell Scientific Publications Limited in connection with the Proceedings of the Symposium on "Herbicides in British Fruit Growing" and the Committee is in the process of negotiating for the production of the 5th Edition of the Weed Control Handbook.

Negotiations are also in progress with Boots' Printing Department for the publication of the Proceedings, 8th British Weed Control Conference, 1966.

The Publications Committee liaises closely with the Conference Programme Committee and the Handbook and Recommendations Committees.

COUNCIL'S CONSTITUTION

In June 1965 certain rules of the Constitution of the Council were amended following decisions taken at previous Council meetings and, in accordance with Rule 14 of the Constitution, the following alterations have been made:

Rule 3 - Membership of Council

The Nature Conservancy was added to the list of member organisations with one official representative.

Rule 8 - Accounts - Paragraph 2

The paragraph was amended to allow not only the Council but also the Council's Finance Committee to approve expenditure by an officer of the Council of an amount exceeding £5.

Rule 9 - Use of Funds

An additional Clause 9A was inserted allowing for the appointment of four Trustees who were given the absolute discretion to apply or invest Council's funds.

Rule 14 - Conferences

The amendment allowed for the replacement of the word "business" by the word "general" in paragraphs (b), (c), (d) and (e).

FURTHER REPRESENTATION ON THE BRITISH WEED CONTROL COUNCIL OF OTHER INTERESTED ORGANISATIONS

The Secretary's Report covering the Council's activities for the two-year period up to November 1964 mentioned the setting up of a sub-Committee under the Chairmanship of the Council's Chairman to make recommendations for Council's consideration regarding additional representation on the Council of interested organisation. The Chairman and Secretary of each of the Council's existing Committees made up the membership of this sub-Committee. As a result of the sub-Committee's recommendations, and after full discussion in Council, it was agreed to invite the Nature Conservancy to accept full membership. This invitation was accepted and the Nature Conservancy subsequently nominated its official representative. It was the view that other organisations that had been considered during the sub-Committee's review were not in a position to make a significant contribution to the interests and activities of the Council except on specific subjects and it was felt that participation could be achieved by means of the Council's power of co-option or by inviting representatives of such bodies to attend meetings when special matters of mutual interest were being considered. Following this decision, the application of the Horticultural Trades Association for membership was declined but, at the same time, this body was informed that Council would be pleased to invite its participation on specific matters of mutual interest. The Horticultural Trades Association indicated its desire and willingness to participate in this way. Subsequently a similar request from the Industrial Pest Control Association for representation on the Council was declined in the same terms.

COUNCIL'S COMMITTEE STRUCTURE

At the end of 1964 Council decided that a review of its Committee structure was necessary to see whether the existing Committees were adequately covering the present day interests of the Council. Accordingly, a special sub-Committee was set up to consider this matter, and this Committee met in January 1965 and reported its deli-

berations and recommendations to the Council which were largely agreed. As a result the following existing Committees were retained:

Conference Organising Committee
Conference Programme Committee
Finance Committee
Publications Committee

Recommendations Committee

It was agreed to re-constitute this Committee to form (a) the Handbook Committee - a small number of generally interested people to act as an Editorial Board, to consider the overall policy for the Handbook, and to take particular responsibility for the preparation of Volume 1; (b) the Recommendations Committee made up of various members, each of whom would be Chairman of a Working Party responsible for the preparation of the recommendations concerned with a given subject. Mr. J. D. Fryer accepted Chairmanship of both these Committees.

Research and Development Committee

It was agreed that the best means of dealing with the highly diverse technical matters that would come up for consideration from time to time was by means of appointing ad hoc Committees to deal specifically with them, thus enabling expert views to be obtained. It was felt, therefore, that the continued existence of the Research and Development Committee was no longer necessary. This Committee was accordingly dissolved after various outstanding matters had been cleared.

New Committees

Two new standing Committees were appointed:

(a) Herbicide Application Committee

It was clear that the subject of herbicide application techniques was becoming increasingly important and would be consistently before Council. A standing Committee to deal with this important aspect was, therefore, necessary. Mr. F. W. Morris accepted Chairmanship of the Herbicide Application Committee.

(b) Education and Communications Committee

This was another important aspect that had not so far been provided for. It was felt that in forming an Education and Communications Committee aspects and problems with which this Committee would be concerned applied not only to herbicides but also to fungicides and insecticides and an invitation to the British Insecticide and Fungicide Council resulted in the formation of a joint Committee, which B.I.F.C. and B.W.C.C. members on the Committee each reporting back to their own Council in their own right. Mr. C. V. Dadd accepted Chairmanship of this Committee.

Membership of Committees

It was agreed that in the case of all Council's Committees the Chairman of each should be appointed by Council, each Chairman then having authority to appoint his own Secretary and Committee members and submit terms of reference.

The full membership of the Council's Committees has already been detailed.

POSSIBLE AMALGAMATION OF BRITISH WEED CONTROL COUNCIL AND BRITISH INSECTICIDE AND FUNGICIDE COUNCIL

The A.R.C. had suggested that it was both desirable and practical to consider amalgamation of the B.W.C.C. and B.I.F.C. In its opinion, the organisation and ac-

tivities of the two Councils are similar and some members sit on both. The two Councils are in close collaboration on a joint Education and Communications Committee and provision is made for joint meetings of the two Application Committees. The Councils share certain officers and use the same publishing facilities. Although interest in the chemical control of pests, diseases and weeds started at different times, these interests have steadily converged and the A.R.C. can see no logical reason for continuing to keep these interests apart, organised by separate Councils. The inter-dependence of herbicide and other pesticide treatments applied to growing crops has become increasingly realised and will become more significant with the continuing developments of intensive systems of growing crops and the drawing together of interests and closer collaboration between workers in the two fields of crop protection would greatly help advances in basic studies that are common to both. A single Council responsible for all aspects of crop protection could do valuable work by unifying the subject and bringing similar interests together in discussion. After consideration by Council of the A.R.C.'s ideas on this subject it was decided in March 1966 by the B.W.C.C., and this decision was endorsed by the B.I.F.C. to set up a joint Working Party consisting of members from both Councils to consider the question of possible amalgamation.

The first step of the Working Party was to form three Study Groups:

- (1) a Technical Study Group to examine the workload arising from the organisation of Conferences, Symposia and the production of the Handbooks.
- (2) a second Study Group to assess the workload and costs of the present administration of each of the two Councils.
- (3) a third Study Group to investigate a possible organisation and structure of a new joint Council.

These three groups have met and have presented their reports to the members of the Working Party. After these have been studied the Working Party will make recommendations to the two Councils.

CONFERENCES, SYMPOSIA AND TECHNICAL MEETINGS

7th British Weed Control Conference, 1964

The Conference, organised by the B.W.C.C., took place from 23rd to 26th November, 1964, at the Metropole Hotel, Brighton. 694 delegates attended the Conference of whom 215, representing 20 countries, were from overseas. The Conference was generally thought to have been outstandingly successful and to have achieved an extremely high standard.

At the 1964 Conference Delegates' meeting various suggestions were put forward for future Conferences and for Council's future activities, and due note was taken of the points raised. The more important issues were:

(a) The question of timing of the next and future Conferences

At the meeting a Resolution proposed by Mr. M. S. Bradford of the National Association of Corn and Agricultural Merchants was considered. This Resolution was as follows:

- "(a) The B.W.C.C. should hold its Conference every other year.
- (b) The Conference should always commence on the third Monday in November, provided that at least ten days elapse between the last day of the Conference and the beginning of the Smithfield Show."

An amendment to the Resolution was put forward that the date should be mid December, but the amendment was defeated and the main Resolution was carried and this was taken into consideration in deciding on the date for the 1966 Conference.

(b) Application Techniques

The application aspect and the need to improve spray machinery design was considered to be of great importance and it was felt that there was a case for a special session at the 1966 Conference on Application Techniques of Herbicides.

(c) Concurrent Sessions

At the 1964 Conference concurrent sessions were introduced for the first time as an experiment, these being limited to two afternoon sessions. The unanimous opinion after the Conference was that the inclusion of concurrent sessions was fully justified and delegates considered there should be more of these at the next Conference.

1966 Weed Control Conference

The 8th British Weed Control Conference 1966 has been arranged for 21st/24th November, 1966, and the particular points mentioned above have been taken into account in the organisation of the Conference.

One-Day Symposium on "2nd Review of Herbicide Usage"

Following the success of the first Annual Review, the Council decided to hold a Symposium on the same subject during 1965 and the "2nd Annual Review of Herbicide Usage" was duly held on Thursday, 14th October, 1965, at the offices of the N.A.C.A. M. in London. In addition to the seven organisations which had participated in the first Review, the Department of Agriculture for Scotland and the Nature Conservancy were represented. In view of the need for more information and work on application techniques a member of N.I.A.E. was invited to attend the Symposium.

The pattern followed that of the first Review and a list of topics for discussion giving a broad coverage on the subject was sent in advance to the participating organisations and their reports formed the basis of the day's discussion.

The Symposium proved once again to be of great interest and value. It seemed that the performance of herbicides in cereals had been generally satisfactory during the past season. It was agreed, however, that the most serious weeds in cereals were the grass weeds viz. couch, wild oats and blackgrass and it was the conclusion that farmers must continue to be advised that these were weeds which had to be controlled even when the degree of infestation was low. In the discussion on application problems it was once more stressed that these arose mainly from the poor condition of spraying machines and the need for better techniques of spraying; it was suggested that collaboration between machinery and chemical manufacturers was necessary in defining practical limits of (a) suspensibility of powders and (b) mechanical agitation of liquids and spraying machines. Calibration of band sprayers and changes in nozzle design had also caused some trouble.

Askham Bryan Symposium on "Chemicals and the Land"

A number of Council members attended this Symposium which was held from 12th-14th April, 1965, at the Yorkshire (W.R.) Institute of Agriculture, Askham Bryan. The Symposium was initiated by the Yorkshire Naturalist Trust. The purpose of the Symposium was to present the findings of those various interested bodies which had made a study of the problems on the use of chemicals in the land, particularly in view of the recent public apprehension as to the safety (including the wild life) aspect. Council members agreed that the Symposium had been very well organised. The discussions were conducted by means of a series of panels and, on the whole the contributions and discussions were balanced and sensible. Proceedings of the Symposium have been published.

Symposium on "Herbicides in British Fruit Growing"

A one-day Symposium on "Herbicides in British Fruit Growing" was held on 24th February, 1966, at the Royal Commonwealth Society, London. The Council had felt that the amount of research work on this subject was very meagre in comparison with the usage of herbicides and a Symposium would give an opportunity to discuss what had so far been achieved in the field and to consider what was necessary by way of research in the future. The Horticultural Trades Association were invited to participate. The first part of the Symposium was devoted to establishing the present position concerning usage of herbicides in fruit growing areas and the scope of research and advisory work, and the second session was devoted to the scientific aspects against the known background. The Symposium was very well attended by 264 delegates including 100 fruit growers and many advisory and technical people. The full Proceedings have been published and are available from Blackwell Scientific Publications Ltd., Oxford.

One-Day National Conference for Farmers

The Council's Programme Committee had suggested that Council should consider holding a one-day National Conference for Farmers say, every two years, at which leading farmers could be kept informed on latest developments in crop protection. The matter was considered by the Council's joint Education and Communications Committee which recommended that such a Conference might be organised jointly by the R.A.S.E. and N.F.U. with the sponsorship of the Council which would also assist in the organisation. Accordingly these two bodies agreed to arrange a Conference entitled "Modern Weed Control Practice" and this is to be held on Thursday, 12th January, 1967, at the Chesford Grange Hotel, Kenilworth, Warwickshire. It will be a follow-up to the British Weed Control Conference in November 1966 and will interpret to the farmer the technical discussions and information on latest developments as presented at the Conference. It is expected that the attendance will be of the order of 350. The two organisations expect to cover all expenses but Council has agreed to guarantee them against loss of a sum up to £50. Publicity for the Conference is being arranged through N.F.U. and R.A.S.E. sources and it is hoped will attract a large number of interested farmers.

Proposed one-day "Turf Symposium"

Council is of the opinion that the use of herbicides in cultivated turf is a neglected aspect of horticulture and has decided to investigate the possibility of holding a one-day Symposium by means of which all information on the subject can be collected together and discussed. The inclusion of insecticides and fungicides, particularly fungicides, is considered desirable and accordingly, in conjunction with the British Insecticide and Fungicide Council, a small sub-Committee has been formed to investigate the possibility of holding such a Symposium and, if practicable, to formulate a suitable programme. Such a Symposium would be held in Autumn, 1967.

European Weed Research Council

Mr. J. D. Fryer was nominated as the B.W.C.C. representative on the European Weed Research Council in succession to Dr. E. K. Woodford who had resigned.

A meeting of the E.W.R.C. held in Paris on 29th November, 1965, was attended by Mr. Fryer who reported that it had been extremely successful. Some new herbicides had been announced and the programme had been arranged to allow adequate time for presentation and discussion. The meeting was followed by the French Weed Control Conference.

Mr. Fryer attended a further meeting of the E.W.R.C. in Lisbon on Tuesday, 28th June, 1966, and the following are some of the points noted by him which may be of interest to delegates:

Hungary and Bulgaria have now accepted membership of the Council.

The E.W.R.C. continues to maintain contact with organisations such as the Weed Society of America and F.A.O., and closer ties with F.A.O. will now be possible through the permanent appointment of an F.A.O. Herbicide Specialist.

An international meeting on "Weed Control in Sugar Beet" will be held in Paris on 9th and 10th March, 1967, in which E.W.R.C. will be sponsors along with I.I.R.B. (International Institute for Research on Sugar Beet) and Columa (the French Weed Control Organisation).

The various Research Groups of E.W.R.C. continue their activities. The Aquatic Weed Group has a meeting scheduled for August 1967 in Oldenburg.

The E.W.R.C. meeting was followed by a Symposium on "Weed Problems in the Mediterranean Area" from 29th June to 1st July, 1966.

The British Weed Control Council will be called upon to contribute a further sum of about £20 against its outstanding guarantee of £53 to the E.W.R.C. in respect of the journal "Weed Research" and there will be no further call on the Council in respect of this guarantee. However, the E.W.R.C. could not envisage an expansion of its activities until the necessary funds had been obtained for it to become firmly established, and it had been decided that ways and means must be found of starting a fund to support its further activities. The members of the "Weed Research" guarantee fund have, therefore, been asked to donate the outstanding amount of their respective guarantees to enable the E.W.R.C. to become established financially and the B.W.C.C. agreed to give the assistance asked for and the outstanding amount of £33 will be made available to the E.W.R.C. as required.

The Proceedings of the first and second E.W.R.C. Symposia on "New Herbicides" are available from the Secretary, E.W.R.C., P.O. Box 14, Wageningen, Netherlands.

PUBLICATIONS

Weed Control Handbook 1965 (4th Edition)

The 4th edition was published on 28th February, 1965, by Blackwell Scientific Publications Limited selling at 32s. 6d. per copy.

This edition is in three sections for ease of reference providing ready access to the vast amount of information contained; in addition an index to the recommendations for the use of herbicides on crops and tables showing the response of weeds to some herbicides have been included. It is generally considered to be an excellent publication and is comprehensive and well presented. It is an improvement on the previous edition with an attractive dust jacket designed and executed by Plant Protection Limited. Up to 31st August, 1966, 4,105 copies had been sold.

Weed Control Handbook 1967 (5th Edition)

Publication of the next edition of the Handbook has been set for November 1967. This edition will consist of two Volumes: Volume I providing a comprehensive background to weeds and weed control practices, and Volume II giving recommendations and the latest information on the development of weed control measures. The latter will be revised every two years as hitherto, but new editions of Volume I, which should "date" more slowly will be produced at less frequent intervals.

In view of the ever increasing size of the Handbook and the work involved in its production, the Council has agreed to provide an honorarium for the Editor, who also serves as Secretary to the Handbook and Recommendations Committees. A prospectus for the two Volumes of the 1967 edition has been prepared by the Council's Handbook

Committee. The next edition is an ambitious undertaking and will, it is hoped, make a valuable contribution to weed control literature.

Proceedings of Symposium on "Crop Production in a Weed Free Environment"

These Proceedings, originally published in July 1963 by Blackwell Scientific Publications Limited, are still selling at 25s. per copy. Up to 31st August, 1966, 136 copies had been sold.

Proceedings of Symposium on "Herbicides and the Soil"

Up to 31st August, 1966, 99 copies had been sold.

This publication is now out of print.

Proceedings of Symposium on "Herbicides in British Fruit Growing"

These Proceedings were published in September 1966 by Blackwell Scientific Publications Limited and are being sold at 42s. per copy. Within the first week 451 copies had been sold, but this figure includes copies made available to delegates who attended the Symposium.

Proceedings, 7th British Weed Control Conference 1964

The Proceedings of the 7th British Weed Control Conference held at Brighton in 1964 were published by the British Weed Control Council in May 1965. Delegates to the Conference each received a copy. The price of these Proceedings is 5 guineas for the complete set (3 Volumes). However, there has been an unprecedented demand and stocks of the complete Proceedings are very nearly exhausted. Extra copies of Volume III were, however, printed to meet possible demand from those delegates who only required Volumes I and II at the Conference and these are still available at a price of 2 guineas per copy.

Previous Conference Proceedings

Copies of Proceedings of the 2nd, 5th and 6th British Weed Control Conferences are still available from the Secretary of the British Weed Control Council.

Pesticide Compendium

It has been suggested to both the British Weed Control Council and British Insecticide and Fungicide Council that the two Councils should jointly consider the question of undertaking the publication of a compilation similar in content to the Canadian Department of Agriculture's "Guide to the Chemicals used in Crop Protection" containing up-to-date technical information on current and new pesticides.

It was considered by the B.W.C.C. that there were considerable practical difficulties involved in producing such a "Pesticide Compendium", and the question of printing, distribution, handling of stocks, money, etc., would need to be looked into carefully. It was thought this kind of project should be handled professionally. The matter is still under consideration.

GENERAL

Labelling of Herbicides

The question of manufacturers being asked to state the content of active ingredients of herbicide products on labels and containers is a subject that has been discussed on previous occasions and is again before Council. The N.F.U. are particularly interested in seeing that such a procedure is established as soon as possible, one of their arguments being that the value of the recommendations given in the Weed Control Handbook is limited so long as the consumer does not know the active

content of the product he is buying. The A.B.M.A.C. representatives on the Council are of course, closely involved. It seems that a cross-section of opinions of various agricultural and horticultural advisory services, the W.R.O., etc., support the adoption of this step. A statement of the active content of certain herbicides is already required under the Ministry Agricultural Chemicals Approval Scheme and this is also the case with scheduled chemicals. It seems logical, therefore, that the procedure should be extended to all chemicals particularly as it is already the practice in Holland, Belgium and Germany, and will inevitably be extended to all the E.E.C. countries.

In view of the various arguments in favour of this step, a Resolution was put forward to the manufacturers (A.B.M.A.C.) asking them to give serious consideration to declaring the percentage of active ingredient on the labels of all herbicides which are based on one single active ingredient and in the case of mixtures, giving a list of all the active constituents. Members of A.B.M.A.C. are already including the names of all active ingredients on their labels and have agreed to review the whole position. It might be wiser perhaps to accept the position rather than be forced to do so by legislation. The general feeling is that the situation in this connection is steadily improving and it is hoped that the Association will implement the procedure.

Liaison with Machinery Manufacturers

Following the N.I.A.E.'s series testing of ground spraying machines and the publication of its test reports, machinery manufacturers have become very much more alive to the importance of producing more efficient spraying machines. The liaison between the Council and A.E.A., which has indicated its willingness to co-operate, is being progressed by the Council's Herbicide Application Committee.

Soil Survey of England and Wales

At the first Annual Review of Herbicide Usage the need for more information and work on soil problems generally was high-lighted. The Council, therefore, approached the Soil Survey of England and Wales to ascertain whether their classification of soils of economic importance could be helpful in the context of the behaviour of herbicides in the soil, and in discussions this organisation was asked whether there were any special aspects of classification of soils they could look for when they made their assessment of different results to ensure, if possible, that the work of the Soil Survey had some regard to herbicides. It appeared, however, that the usefulness of the work of the Soil Survey of England and Wales with respect to herbicides was very restricted and would not, according to Dr. D. Osmond of the Soil Survey, at present provide any meaningful information which could apply to the Council's particular problem. The question of whether the N.A.A.S. should be asked to include a soil analysis service for herbicides as is already being done in the case of fertilizers is being borne in mind, and will be progressed when the activity of specific herbicides can be sufficiently well correlated with measureable soil properties.

International Agricultural Aviation Centre

The Council has made a donation of £25 towards the 1966 Annual U.K. Subscription of £500 in order to retain U.K. membership of the International Agricultural Aviation Centre. Council, however, is seeking more information on the activities of this organisation and further support towards the U.K. membership is contingent on the obtaining of such information. This year the Centre has arranged a course for pilots at Cranfield.

Spanish Weed Control Council

The Spanish Government has indicated interest in forming a Weed Control Council and requested the assistance of the B.W.C.C. in helping towards this project.

Accordingly, a copy of Council's Constitution together with reports on the activities of the Council between 1960-1964, have been forwarded in furtherance of the Council's object of wide dissemination of information on the subject of weed control.

Weed Society of New South Wales

Information has been received from Australia regarding the recent formation of a Weed Society of New South Wales. This Society is to issue regular Newsletters and has already held a "Field Day" where a talk was given on "Weed Control Methods in Japan". The inaugural meeting of the Society was held on 17th February, 1966.

ACKNOWLEDGEMENT

The Council would like to make acknowledgement, with grateful thanks, to those persons who, by courtesy of member organisations of the Council, carry out the enormous amount of administrative work necessary to run the Council's affairs. These helpers operate on a purely voluntary basis, giving much of their spare time, and without their help the Council could not function.

C. BLOEMINK,
Secretary.

LIST OF DELEGATES

- ABEL A.L.
Fisons Pest Control, Cambridge.
- ABEL G.W.P.
Baywood Chemicals, Bury St.Edmunds.
- ADHAM Dr. M.I.
Velsicol International Corp., Beirut.
- AELBERS E.
N.V. Orgachemia, Boxtel, Holland.
- AIKMAN C.D.
Scot.Agricultural Ind., Edinburgh.
- ALCOCK Dr. M.B.
University College of North Wales.
- ALDHOUS J.R.
Forestry Commission, Farnham, Surrey.
- ALISON D.A.
Mi-Dox Ltd., Smarden, Kent.
- ALLEN G.P.
Weed Research Organisation, Oxford.
- ALLEN Dr. H.P.
Jealott's Hill Res.Stn., Bracknell.
- ALLEN M.G.
Shellstar Ltd., London, S.W.3.
- ALLEN T.J.
Shell Refining Co., Cheshire.
- ALLEY M.O.
Shell Int.Chemical Co., London.
- ALLMAN G.P.
E. Allman & Co. Ltd., Sussex.
- ALLOTT D.J.
Min. of Agriculture, N.Ireland.
- ANDERSSON A.
Agricultural College of Sweden.
- ANGELL G.L.
Cyanamid of G.B.Ltd., London.
- ANNIS C.W.
Lincs. Aerial Spraying Co.
- ANTONELLI C.
Sipcam, Milan, Italy.
- APPLEBY Dr. A.P.
Oregon State University, USA.
- ARDANT P.
Eli Lilly Int.Corp., London.
- ARNDT Dr. F.
Schering AG., Berlin 65.
- ARNOLD G.I.
Boots Pure Drug Co., Nottingham.
- ARNSHOF A.
Lolland-Falsters, L.M.A.F., Denmark.
- ASHBY D.G.
Fisons Pest Control Ltd., Cambridge.
- ASHER B.
Fisons Pest Control Ltd., Cambridge.
- ASHTON Miss P.J.
Shell Int.Chemical Co., London, S.E.1.
- ASHWORTH R. de B.
Plant Pathology Lab., Harpenden.
- ASHWORTH R.E.
Shellstar Ltd., London, S.W.3.
- ASPLIN J.W.
Asplin Chemicals Ltd., Doncaster.
- AUSTIN M.D.
Commercial Grower, London, E.C.4.
- AYERS M.R.L.W.
Ciba Lab.Ltd., Horsham, Sussex.
- BACHEM K.E.
Baywood Chemicals Ltd., Bury St.Edmunds.
- BADLEY A.R.
University College of North Wales, Bangor.
- BAGNALL B.H.
Baywood Chemicals Ltd., Bury St.Edmunds.
- BAILEY P.F.
Cyanamid of G.B.Ltd., London, W.C.2.
- BAKKEREN M.H.C.M.
N.V. Aagrunol, Groningen, Holland.
- BALHUIZEN F.
Velsicol Int.Corp., Zeist, Holland.
- BALL R.W.E.
May & Baker Ltd., Ongar, Essex.
- BANKS D.R.B.
Cyanamid of G.B.Ltd., London, W.C.2.
- BANKS J.N.A.
Nat.Ag., Advisory Service, Bristol.
- BARBER Dr. M.S.
N.R.D.C., London, S.W.1.
- BARLOW J.
Agricola Chemicals Ltd., London, W.C.1.
- BARLOW J.N.
Berk Ltd., London, W.1.

BARNSLEY G.E.
Geigy (U.K.) Ltd., Manchester 22.

BARRALIS G.
Institut Nat.de la Recherche, France

BARRATT Dr. D.W.A.
Jealott's Hill Res.Stn., Bracknell.

BARTLETT D.H.
Murphy Chemical Co., St.Albans.

BATEMAN R.
Burt, Boulton & Haywood, London.

BAXTER G.D.
Lennig Chemicals Ltd., Hertford.

BEAN K.W.
World Crops, London, W.6.

BEESLEY C.W.
Dow Chemical Co. (U.K.) Ltd., London.

BEESLEY D.W.
Nat.Ag.Advisory Service, Newcastle.

BEGON J.
Soc.Commerciale pour l'Agriculture.

BENITEZ A.
Shell Colombia S.A.

BENNETT J.M.
Fisons (Canada) Ltd., Ontario.

BERTHET P.L.
Monsanto Europe, Belgium.

BEVINGTON H.L.S.
Fisons Overseas Ltd., London, W.1.

BIEGEL Dr. W.
Cela G.m.b.H., W.Germany.

BIENHAUER H.
Landwirtschaftliche Abt., Germany.

BIGGS A.G.
Hadlow College, Swanley, Kent.

BIJLOO J.D.
N.V.Philips-Duphar, Holland.

BILLITT A.W.
Boots Pure Drug Co., Nottingham.

BJERRING J.
Elias B.Muus Odense A/S, Denmark.

BLATCHER J.S.
Shellstar Ltd., London, S.W.3.

BLOOD T.F.
Nat.Ag. Advisory Service, Trawscoed.

BOBBY G.H.
Leigh Thomas & Co., Isle of Wight.

BOCION P.
Glasshouse Crops.Res.Inst., Sussex.

BOLTJES P.B.
Monteshell, Milan, Italy.

BOON L.M.
Bilstraat 206, Utrecht, Holland.

BOOTH W.H.
May & Baker Ltd., Dagenham, Essex.

BOND R.A.
British Sugar Corp., Peterborough.

BOS H.D.
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ERRATA

Corrections to Volumes I and II

Page 328 - Table 1

for "G.36392/simazine" read "Methoprotryne (G.36393)/simazine".

Page 330 - Table 3

for "G.36392/simazine" read "Methoprotryne (G.36393)/simazine".

Page 568 - lines 7, 8 and 9

"66 ppm" should read "6.6 ppm"

"18 ppm" should read "1.8 ppm"

"12.4 ppm" should read "1.24 ppm"

"7.4 ppm" should read "0.74 ppm"

Page 610 - Table 1 - the last line in the section concerned with Benzonitriles referring to PH 40-25

"1.68 PRG Dm Cm"

should read

"1.68 PRG Dm Dm"

I N D E X

Reference is made only to the first appearance of an item in each paper. Weed species will be found under botanical name, crop species under the common English name where one exists.

α -carbo(2,4-dichlorophenoxy ethoxy)ethyl-N-phenyl carbamate	127
α -chloro-N-isopropylacetanilide (CP31393)	398, 607, 631, 639, 646, 663, 673, 679, 668, 873
α -chloro-6-t-butyl-o-acetotoluidide (CP31675)	207, 326, 397, 553, 607, 790
<u>Abies grandis</u>	136
<u>Abutilon theophrasti</u>	378
<u>Acer pseudoplatanus</u>	531
<u>Achillea</u> spp.	495
<u>A. millefolium</u>	517, 531
<u>Adonis</u> sp.	217
<u>Aegopodium podagraria</u>	503, 529, 533, 546
<u>Aethusa cynapium</u>	60, 659, 678, 730
<u>Agropyron repens</u>	19, 76, 136, 227, 341, 382, 397, 414, 452, 506, 531, 533, 538, 563, 569, 576, 580, 625, 650, 760, 765, 815, 872, 874, 887,
<u>Agrostis</u> spp.	291, 303, 327, 345, 768, 856
<u>A. gigantea</u>	531, 563, 569, 576, 580, 760, 815, 887
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