UNITED NATIONS EDUCATIONAL
SCIENTIFIC AND CULTURAL ORGANIZATION

REPORT ON
THE EAST AFRICAN ACADEMY

by

J.M. ROBERTSON

18 FEBRUARY 1965
# UNITED NATIONS EDUCATIONAL SCIENTIFIC AND CULTURAL ORGANIZATION

## EAST AFRICAN ACADEMY

### CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong> INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td><strong>B.</strong> TERMS OF REFERENCE</td>
<td>2</td>
</tr>
<tr>
<td><strong>C.</strong> SUMMARY DESCRIPTION OF THE PRESENT STRUCTURE AND ACTIVITIES OF THE EAST AFRICAN ACADEMY</td>
<td>3</td>
</tr>
<tr>
<td>C.I. STRUCTURE</td>
<td>3</td>
</tr>
<tr>
<td>C.II. MEMBERSHIP</td>
<td>4</td>
</tr>
<tr>
<td>C.III. ACTIVITIES</td>
<td>4</td>
</tr>
<tr>
<td>C.IV. FINANCE</td>
<td>5</td>
</tr>
<tr>
<td>C.V. SECRETARIAT</td>
<td>6</td>
</tr>
<tr>
<td><strong>D.</strong> POLICY FOR SCIENCE</td>
<td>6</td>
</tr>
<tr>
<td>D.I. INTRODUCTION</td>
<td>6</td>
</tr>
<tr>
<td>D.II. THE ROLE OF SCIENCE</td>
<td>6</td>
</tr>
<tr>
<td>D.III. UNITED NATIONS CONFERENCE ON THE APPLICATION OF SCIENCE AND TECHNOLOGY FOR DEVELOPMENT</td>
<td>8</td>
</tr>
<tr>
<td>D.IV. LAGOS CONFERENCE, 1964</td>
<td>8</td>
</tr>
<tr>
<td>D.V. IMPORTANCE OF SCIENTIFIC 'COMMUNITY'</td>
<td>9</td>
</tr>
<tr>
<td>D.VI. THE SITUATION IN EAST AFRICA</td>
<td>10</td>
</tr>
<tr>
<td><strong>E.</strong> THE ROLE OF THE ACADEMY AND A SURVEY OF POSSIBLE ACTIVITIES</td>
<td>11</td>
</tr>
<tr>
<td>E.I. AIMS</td>
<td>11</td>
</tr>
<tr>
<td>E.II. PRELIMINARY CONSIDERATIONS</td>
<td>11</td>
</tr>
<tr>
<td>E.III. RESEARCH, INTEGRATION, DISSEMINATION: SOME CRITERIA</td>
<td>12</td>
</tr>
<tr>
<td>E.IV. SURVEY OF POSSIBLE ACTIVITIES</td>
<td>14</td>
</tr>
<tr>
<td>(1) Research and the advancement of learning</td>
<td>14</td>
</tr>
<tr>
<td>(2) Integration of the scientific community</td>
<td>16</td>
</tr>
<tr>
<td>(3) Dissemination of science to the public</td>
<td>23</td>
</tr>
</tbody>
</table>
STRUCTURE AND ORGANIZATION

F.I. GENERAL

F.II. THE CENTRAL STRUCTURE OF THE ACADEMY
(1) Section Committees
(2) The Council
(3) The Executive Committee
(4) The Officers
(5) Standing Committees
(6) Programme Committee and Programme Planning

F.III. BRANCHES
(1) The role of Branches
(2) Organization of Branches
(3) Measures designed to strengthen Branches

F.IV. CONSTITUTION

F.V. FINANCE
(1) General
(2) Appeals for Funds
(3) Establishment of Secretariat
(4) Financial Procedures

F.VI. SECRETARIAT
(1) Need for Executive Officer
(2) Recommendations concerning the appointment of an Executive Officer

G. SECRETARIAT AND ADMINISTRATION

G.I. GENERAL REQUIREMENTS

G.II. EXECUTIVE OFFICER: TERMS OF REFERENCE

G.III. EXECUTIVE OFFICER: DEFINITION OF RESPONSIBILITIES

G.IV. EXECUTIVE OFFICER: DUTIES
(1) General
(2) Correspondence
(3) Meeting Procedures
(4) Records
(5) Annual Conference
(6) Office Administration
(7) Miscellaneous Duties
G.V. EXECUTIVE OFFICER: OFFICE ADMINISTRATION

(1) Introduction 61
(2) General Procedures 61
(3) Filing System 62
(4) Membership Records 64
(5) Addressing Procedures 65

H. CONCLUSIONS AND RECOMMENDATIONS 66

H.I. ACHIEVEMENTS OF THE ACADEMY 66
H.II. COMMENTARY ON THE ACADEMY'S AIMS 67
H.III. RESERVATIONS CONCERNING FUTURE ACTIVITIES 67
H.IV. SUMMARY OF PROPOSALS FOR THE ACADEMY'S FUTURE PATTERN 68
H.V. RE-CONSIDERATION OF INTERNAL STRUCTURE AND ADMINISTRATIVE MACHINERY 68
H.VI. CONSOLIDATION OF THE ACADEMY'S STANDING AS A LEARNED SOCIETY AND SUGGESTIONS OF WAYS IN WHICH THE ACADEMY MIGHT SEEK THE HELP OF THE EAST AFRICAN COMMON SERVICES ORGANIZATION 69
H.VII. RECOMMENDED PROGRAMME OF ACTIVITIES 70
H.VIII. PROPOSED ACTION BY UNESCO IN SUPPORT OF THE EAST AFRICAN ACADEMY 72
H.IX. SUMMARY 73

I. APPENDICES 74

I.1 Sources of Advice 74
I.2 Budget proposed for the supply by UNESCO to the East African Academy of essential office furniture and equipment 76
I.3 Recommended list of Directories, Year Books etc. 77
I.4 Associations for the Advancement of Science 78
I.5 Science Fairs in the United Kingdom 79
I.6 Notes on the preparation of Committee minutes 81

J. ANNEXES

J.1 Aims and activities of the British Association for the Advancement of Science
J.2 Junior British Association Meeting: Specimen Programme
J.3 Science Fair: Specimen programme
J.4 Notes on the organization of British Association Section Committees

J.5 Contributors to British Association Annual Meetings: Specimen forms

J.6 Notes on the local organization of British Association Annual Meetings

J.7 British Association Preliminary Programme (Annual Meeting)

J.8 British Association Final Programme (Annual Meeting)

J.9 British Association: Branch Regulations

J.10 British Association: Statutes
TO: Mr. A. Natheyey, Assistant Director-General, Science, UNESCO, Place de Fontenoy, Paris, 7e.

FROM: J.M. Robertson, Deputy Secretary, British Association for the Advancement of Science, 3 Sanctuary Buildings, 20 Great Smith Street, London, S.W.1.

SUBJECT: Report on the organisation, administration and activities of the East African Academy, c/o Uniafric House, Koinange Street, P.O. Box 30492, Nairobi, Kenya.


A. INTRODUCTION

I. I would like to preface the report on my mission which was undertaken at the request of UNESCO, and was sponsored by the East African Common Services Organisation, by saying how privileged I feel at having been given the opportunity to visit East Africa and to see something at first-hand not only of its problems but also of the unmistakable energy, enthusiasm and ability with which solutions for those problems are being sought. I would like to express my appreciation also of the unfailing courtesy and friendliness shown to me by the peoples of Kenya, Uganda and Tanzania (each of which I visited during my tour) - and to remark on the particular pleasure which I took in being present in Nairobi during the celebration of Kenya's accession, a historic occasion, to the status of a Republic within the Commonwealth.

II. My task, as a visitor to East Africa for the first time, and as an adviser on the East African Academy whose officers and members have thought widely and deeply about
its future role, and have already achieved much in practice, could not have been accomplished without a great deal of help and advice and this I received in full measure. I would like to take this opportunity, therefore, of recording my very real sense of indebtedness to The East African Common Services Organisation (and through it to the Governments of Kenya, Uganda and Tanzania); to the Officers of the East African Academy; to the representatives of UNESCO and of the United Nations Technical Assistance Board and Special Fund (Nairobi and Dar es Salaam); and to the very many individuals (see Appendix 1) who received me with such kindness and made me, so willingly, the beneficiary of their own experience and judgment.

(My last weeks in East Africa were interrupted by an unexpected but unavoidable period in hospital and I was therefore unable, much to my regret, to visit Zanzibar and make the acquaintance of the Officers of the Zanzibar branch of the Academy).

B. TERMS OF REFERENCE

I. The terms of reference laid down in the contract offered by UNESCO (NS/2209/64, dated September 30, 1964) were as follows:

"The Consultant, acting upon the instructions of the Director-General of UNESCO, shall - effect a mission to Nairobi (Kenya) to assist the President and the Executive Council of the East African Academy in organizing the working methods of the Academy.

To this effect, and in co-operation with the Secretary of the Academy, he shall prepare the regulations for the functioning of the Secretariat
and shall study the measures that shall be taken as regards documentation, repertories, methods of multiplying documents, organization of sessions.

He shall establish a report at the intention of the governing authorities of the Academy, proposing a programme of activities taking into consideration the existing facilities."

II. These terms of reference were amplified during preliminary discussions with the Secretary of the Academy in which the hope was expressed that I would, in making a report, also direct my attention to the following specific points:

(1) liaison between members of the Academy
(2) relations between the Academy and other scientific societies in East Africa, Africa, and overseas
(3) the development of contacts between the Academy and the public
(4) the preparation of a draft budget, for submission to UNESCO, for the expenditure of approximately £2,000 on essential office furniture and equipment (see Appendix 2)

C. SUMMARIZED DESCRIPTION OF THE PRESENT STRUCTURE AND ACTIVITIES OF THE EAST AFRICAN ACADEMY

I. STRUCTURE

The current aims and activities of the Academy are set out in its Constitution which provides for:

(i) A governing Council, of which the principal officers are the President, Treasurer and Secretary

(ii) Branch Committees in Kenya, Uganda, Tanganyika and Zanzibar (each with its own Chairman, Treasurer and Secretary)
(iii) A number of standing committees of the Council
(Executive, Membership, Research and Studentships,
Editorial and Library, Education, Joint Committee
on Social and Cultural Affairs, Scientific Policy,
African Studies)

II. MEMBERSHIP

The Academy’s aims are set out in full below (Section
E.I.(1)). Membership is possible in the following categories:
ordinary membership (open to citizens of East African
countries), associate, student, foreign associate and
institutional membership. The basic adult individual
subscription is Sh.50 annually and the institutional
subscription is Sh.100 annually. There are currently 5
institutional members and 162 individual members.

III. ACTIVITIES

The Academy’s principal activities to date have been
as follows:

(i) The staging of an annual symposium: at Makerere
University College, Kampala, Uganda in June 1963
and at University College, Nairobi, Kenya in
June 1964; a third symposium will take place at
the University College, Dar es Salaam in the
summer of 1965.

(ii) Publication of “Proceedings” based on the annual
symposia: an account of the first symposium (at
Makerere) has now been published and the
proceedings of the 1964 symposium are now being
prepared for printing.

(iii) The arrangement, at Branch level, of programmes
of lectures during the year for both members and
non-members.
(iv) The preparation, with the help of a grant from the National Academy of Sciences, U.S.A., of a Directory of Scientific and Technological Research Facilities in East Africa: printing and publication of the Directory is expected to take place shortly.

(v) The initiation of the work of the Council's standing committees including the planning of an East African contribution to the International Biological Programme, liaison with the central committee for the "Encyclopaedia Africana" project, and the attendance of representatives of the Academy (as observers) at joint meetings of the East African Common Services Research Councils.

(vi) The development of overseas liaison: representatives of a number of foreign Academies of Science (e.g. The Royal Society of London; the National Academy of Science, U.S.A.; the Soviet Academy of Sciences) have attended the Academy's annual symposia, and representatives of the Academy have visited Moscow as the guests of the Soviet Academy of Sciences, New Delhi as guests of the Association of Scientific Workers of India, and Peking as guests of the Scientific and Technical Association of the People's Republic of China and The Peking Centre of the World Federation of Scientific Workers.

IV. **FINANCE**

Membership subscriptions (currently amounting to approximately Sh.8600 = £430) provide the Academy's only regular source of income but it is hoped to supplement this, in future, by sales of the printed "Proceedings". Its continued activity to date has largely been made possible, therefore, by grants for general purposes (e.g. organization of the annual symposia, travelling expenses of officers and committees, office administration):-
V. SECRETARIAT

The Academy has no Office of its own and its business is currently conducted from the premises of the East African Institute for Social and Cultural Affairs in Uniafric House, P.O. Box 30492, Koinange Street, Nairobi, Kenya. The Secretary and other Officers of the Academy share an office with one of the Institute’s own employees and have the use, for committee meetings, of the Institute’s Conference Room; they share, also with the Institute, the services of one full-time secretary/stenographer in whose office the Academy’s files and records are stored.

D. POLICY FOR SCIENCE

I. INTRODUCTION

Since any advice on the administration of the Academy must logically arise from a consideration of its structure, and since that structure must be adapted to its projected activities - which must themselves reflect the purposes which the Academy was created to fulfill - it seems clear that a review, however summary, of the ‘cultural climate’ in which the Academy must operate, would have some merit.

II. THE ROLE OF SCIENCE

Sir Eric Ashby, F.R.S., in a recent Presidential Address to the British Association for the Advancement of Science, remarked that “You cannot isolate science; it is part of the seamless fabric of civilisation. The advance-
ment of science depends not only on the training of professional scientists; it depends also on the public image of science, and this is a product of the machinery which weaves science into the contemporary culture. The arguments which may be adduced in support of the belief in the vital importance of science implicit in this quotation are too well known to need re-stating but it may, perhaps, be worth summarizing the conclusions from them in the following form: the speed with which science and technology are transforming the modern world creates (for all countries) urgent problems of economic survival, of education, of adaptation to changing social conditions—and raises major issues of policy. For crucial decisions have to be taken about the proportion of a country's human and physical resources which should be devoted to science and technology and about the ways in which these resources should be shared between the different branches of science.* Coming to such decisions and finding the money to finance them, and the trained manpower to implement them, implies the need for a deeper understanding of science in the Government, in industry, among scientists themselves, and, above all, on the part of the general public—for it is not only wrong to expect the public, as tax payers, to go on paying for something they do not fully understand, but it is also dangerous if, as might happen without understand- ing, scientists came to be regarded as 'miracle workers' who were a law unto themselves.

* To avoid unnecessary repetition, 'Science' is used throughout this report as a summary description of the whole field of learning encompassed by the Academy.
III. **UNITED NATIONS CONFERENCE ON THE APPLICATION OF SCIENCE AND TECHNOLOGY FOR DEVELOPMENT**

The relevance of this analysis, and of this general view of the significance of science, was endorsed at Geneva only a year ago by the "United Nations Conference on the Application of Science and Technology for the benefit of the less-developed areas" (February 4–20, 1963). There was fairly general agreement at the Conference that developing countries must undertake their own scientific and technological research and development; for, if they do not, they will lack the ability to keep up with developments in the international community of science and, more particularly, to adapt foreign research to their own uses, to carry out essential surveys of national resources, to make full use of external research assistance and to create a climate conducive to technological change. It is also probably true to say that it was generally recognized that for some time at least much effort in the developing countries would have to be devoted to education and training, gathering information and adapting and applying research sponsored by the so-called 'advanced' countries.

IV. **LAGOS CONFERENCE, 1964**

A still more recent conference ("International Conference on the Organization of Research and Training in Africa in Relation to the Study, Conservation and Utilization of Natural Resources", Lagos, Nigeria, 28 July to 6 August, 1964) considered, in depth, what contribution science could make to Africa's special problems. At the end of this conference the African countries present demonstrated their acceptance of the vital importance of science and technology in a number of significant recommendations, including the following:
(1) "that the governments should devote continued and very large-scale efforts to the promotion of scientific and technical research;"

(2) "that, to this end, campaigns should be systematically organised in each country with a view to drawing the attention of the population to the essential role which science and technology can play in solving the social and economic problems which hinder the efforts the African countries are making to raise the material and spiritual standards of living of their peoples;"

and, more specifically,

(3) "that Governments recognize their specific responsibility in the creation of science consciousness of the people and intensify their efforts, including financing, in this respect."

and

(4) "that science clubs, science associations, science museums and exhibitions and film libraries be used for helping to implant science in African countries.'

**IMPORTANCE OF SCIENTIFIC 'COMMUNITY'**

The recommendations quoted above point, if only by implication, to certain factors which characterise, and give great advantage to, the 'advanced' countries namely, the existence both of a store of scientific and technological expertise accumulated over the years and of what has been termed 'a scientific community' (i.e. an organised group with a developed system of institutions for internal communication). Such a 'scientific community' is large and complex: growth comes from the interaction of one part of the group on another and the whole is united by professional bonds - agreed values, rigorous standards and
highly developed systems of communication both within the national community and with the international community. In many developing countries scientists and other men of learning are, as yet, relatively few in number and such a 'community' has not had time to emerge. It would be reasonable to conclude, therefore, that one of the criteria of an effective policy for science will be the success with which such a community can be developed.

VI. THE SITUATION IN EAST AFRICA

This analysis is largely derived from recent papers (UNESCO, O.E.C.D., Stevan Dedijer's article on "Under-developed Science in Underdeveloped Countries"). What, then - assuming that it is broadly acceptable - is its relevance for East Africa? For East Africa has a considerable scientific and technological infra-structure consisting of Government Research Laboratories; extremely effective Research Councils which administer research institutes of outstanding and, in some cases, international repute; three University Colleges now linked in a loose federal structure; a number of professional societies; and a rapidly developing commercial/industrial matrix. The broad answer must be that while 'research' in an academic sense tends, naturally and legitimately, towards specialisation and isolation from other parts of the community (both scientific and lay) the urgent need of East Africa, in common with many other countries, to determine and initiate the broad priorities of economic development, demands concentration of effort and the optimum use of its relatively scarce resources. From this follows the need both to strengthen the scientific community by improving the links between its parts and to assure continuing support for it (at a time when there are
many other insistent demands on the available resources) by making its achievements and potentialities known to the much wider community of which it is the servant.

E. THE ROLE OF THE ACADEMY AND A SURVEY OF POSSIBLE ACTIVITIES

I. AIMS

(1) The aims of the Academy as set out in its Constitution are:

(i) To promote the advancement of learning in East Africa.

(ii) To promote communication and co-ordination between and among those engaged in research in East Africa.

(iii) To provide a forum for discussion and a medium for dissemination among its members and the public.

(iv) To encourage scientific, technological and other advanced training within East Africa and to find ways and means for such training elsewhere.

(2) These aims may be broadly summarized in terms of the following functions: 'research', 'integration' (the development of communication between specialists) and 'dissemination' (the encouragement of a wider public understanding of the methods, concepts and applications of science). Each of these functions requires separate discussion but it will be desirable, first of all, to make some general comments on their realisation in terms of specific activities.

II. PRELIMINARY CONSIDERATIONS

(1) It must be stressed that what follows is intended solely as a review of possible activities (both short-term and long-term) and is not offered as a programme capable
of early fulfilment: decisions to adopt any of the suggestions concerned must clearly be preceded by full discussion within the Academy itself and be taken in the light both of their appositeness and their feasibility.

(2) The activities considered below are described in terms of the three main functions postulated above rather than in terms of the Academy's organisational structure. It must be emphasised, therefore, (a) that realisation of some of the activities concerned (e.g. the Annual Conference) may well bring all three functions into play; (b) that there is (deliberately) no extensive discussion at this stage of the operational role of Branches as opposed to that of the parent body, the Council of the Academy itself.

III. RESEARCH, INTEGRATION, DISSEMINATION: SOME CRITERIA

(1) Research

The Academy's aim, in principle, will clearly be to bring together the most competent scientists (and other men of learning) in appropriate groups to deal with scientific problems and to exchange information in the furtherance of research. The contribution which the Academy can make to East Africa in this field will, thus, flow from the strength of its devotion to knowledge for its own sake and from the quality of its members' contribution to the fund of such knowledge. The Academy's strength and reputation will, therefore, be based on its success in achieving a membership which is widely representative of the scientific/humanistic community as a whole.

(2) Integration

Given this strength, the Academy's natural aim will be to provide a forum for discussion - a meeting place for specialists from different disciplines - and a source
of independent advice on scientific matters for all who may seek it. More than this the Academy might properly expect to be able to offer an 'umbrella' beneath which the diverse members of the scientific community could meet for the discussion of common problems — and to act as a clearing-house for information and ideas which might be of common interest.

(3) Dissemination

H.R.H. Prince Philip, The Duke of Edinburgh said, in an address a year or two ago at an Annual Meeting of the Indian Science Congress Association: "Every human invention or discovery can be used for good or for evil and in the end it is the people as a whole who decide which it is to be. It is therefore essential that the possible consequences of scientific research should be put before the forum of ordinary people. Only in this way can the combined opinion of reasonable, upright and humane men and women throughout the world exert the necessary pressure to ensure that science is used to set free and not to enslave mankind."

The Academy will no doubt wish, in this context — as has been said of the Royal Society of London — 'to mediate between the individual and the community, depending on the loyalty of the one and the sympathetic understanding of the other'.

(4) Perhaps one general point should be made at this stage which bears on each of the three primary functions outlined above: the Academy should expect, as a consequence of the proclaimed generality of its interests (and as, with the passage of time, it develops and strengthens its connections with all sections of the scientific and lay community) to act as the primary co-ordinating body for science in East Africa. It will contemplate no invasion
of the ground occupied by other institutions but will, on
the contrary, seek to collaborate with and if possible to
assist other institutions, to avoid duplication of effort,
and to concentrate on meeting, itself or with others,
unsatisfied needs.

IV. SURVEY OF POSSIBLE ACTIVITIES

It is proposed for the sake of simplicity to relate
the following survey of possible activities to the three
main functions considered above:

(1) Research and the Advancement of learning

It would obviously be invidious, not to say
impracticable, for specific proposals to be made by anyone
who is not thoroughly familiar with the whole range of
scientific work (and with the consequent problems) being
undertaken in East Africa but it would seem clear, in
principle, that certain activities might be undertaken.
Before attempting to outline such activities one general
point must be made. As the output of East African
graduates from the three University Colleges (and from
Universities overseas) grows, and the number of physicists,
chemists, botanists, zoologists, engineers, sociologists
and so on multiplies it will be natural for the workers
in these fields to want to establish their own specialist
societies. Such indeed has been the historical pattern
of growth in most countries concerned to develop a
scientifically literate population. Such a development
will, moreover, be entirely desirable if specialists in
the different academic disciplines are not only to be able
to make their own contributions to knowledge (based very
often, no doubt, on the wealth of local - East African -
research material) but also to keep pace with the rapid
advance of knowledge elsewhere and, by so doing, to be
able to communicate as equals with specialists throughout the world. The Academy will be able to offer the members of such societies, as they develop, a forum for the discussion of their work and of its possible impact on other fields of study and it is to be hoped that the societies, on their side, will recognise the value to be gained both by affiliation to the Academy through the mechanism of Institutional Membership and by their own members becoming individual members of the Academy in their own right. At the same time it is to be expected that the Academy, recognised both at home and abroad as the primary scientific body in East Africa, will be able to help such societies to maturity (and so contribute to the necessary growth of a scientific infra-structure) by according them due recognition and by supporting them in their relations with similar societies overseas, in the arrangement of specialist meetings and, when appropriate, in the procurement of funds for special purposes such as conferences and publications.

It is hardly necessary to remark, at this juncture, that a number of specialist societies already exist and make a considerable contribution to the scientific life of East Africa: what is now foreseen is an increase in the number of such groups and the multiplication, thereby, of the sources of the Academy's own strength.

(i) At Branch level

The staging of lectures, seminars and discussions related both to the special interests of members in the different sections of the Academy and to those of other scientific workers in the area who may not be members.

(ii) At Academy level

(a) The setting up of working parties (the
membership of which should be representative of all interested parties within the scientific community), either on the Academy's own initiative or at the invitation of outside bodies, to investigate and report on matters of general interest and concern. Subjects for such studies might include a survey of research undertaken in non-Government laboratories and institutes to determine what is being done and - perhaps by the creation at a later stage of some sort of consultant service - to indicate ways in which available knowledge and information might be used to better effect or in which gaps in knowledge or information could be filled. Much work in the field of applied engineering, for example, could perhaps be advanced if mathematicians, physicists and chemists joined engineering research workers in studies of the problems involved.

(b) The Academy has already set up a standing Science Policy Committee. This committee (suitably strengthened) could begin its deliberations by (i) assembling and studying as complete a collection as possible of the material published in this field (by UNESCO, OECD, National Academies of Science, etc., etc.); (ii) by then proceeding to assemble and study a similar collection of reports and papers dealing with research undertaken, surveys of resources made, etc., in East Africa itself with a view to assessing existing knowledge and to determining what gaps, if any, exist in that knowledge.

(2) Integration of the Scientific Community

(1) Annual Conference

While the Academy must, through its Branches, aim at maintaining a programme of activities for members and others throughout the year it would seem that there would be considerable merit in concentrating much of its
immediate effort on making its Annual Symposium (perhaps Annual Meeting or 'Congress of Science and the Arts' would be more attractive and descriptive terms) a major success and outstanding occasion. The Annual Meeting could then, it must be emphasised, provide a means of linking and contributing to the fulfilment of the Academy's three primary functions.

If this objective were to be sought some clearer definition of the purposes of the Annual Meeting would have to be attempted. Broadly speaking the aim might be to draw together scientists of various disciplines for their mutual understanding and to give interested non-scientists an opportunity of learning something about science in East Africa as well as the world at large. More specifically, the Annual Meeting would have the following particular purposes:

(a) to encourage specialists to discuss their work with their colleagues in all its theoretical complexity - for fundamental work is at the heart of all progress in science.

(b) to encourage scientists to discuss their work with specialists from other fields: for while science is classified into compartments the compartments are not watertight and sometimes leak into one another - and nowadays many of the really exciting researches lie at the leaks!

(c) to promote a more general and informed interest in science and to teach laymen (including university students and young people in schools) something of what science really is - not just the sensational discoveries but, rather, the way scientists think and work and the patience and
humility needed for research.

(d) to develop a more general understanding of the broader implications (social, economic and political) of science.

If some such view of the Annual Meeting is accepted then it will be necessary to look also at the organisation of the meeting and this point is discussed in section F (Organisation and Structure of the Academy) below.

(ii) The gathering of information

The Academy could offer an extremely useful service by offering itself as a reservoir of - and clearing-house for - information about the activities of the scientific community as a whole. It is already in the process of producing a Report on Scientific and Technological Research in East Africa: it is suggested that the next step would be to undertake the preparation of a number of similar publications. The Branches could properly contribute, in this context, by being made responsible for the collection and editing of the necessary information within their own territories.

(a) A Directory of all Scientific and Learned Societies in East Africa (giving details of aims, constitution, membership, names and addresses of officers, subscriptions and activities).

(b) A register (or "Who's Who") of all individuals engaged in research and development in East Africa (giving names and addresses, qualifications, and a resume of work engaged in).

(c) A calendar (separately from (a) above) of the dates of the meetings of scientific and learned societies, and of research institutes.
(d) A list of visiting scientists: material for such a list could come from Branch liaison committees, from other Societies, from the research institutes and Universities, the British Council and from such overseas sources as National Academics for Science.

It should perhaps be stressed here that once the publication of such documents is undertaken continuing effort is needed if they are to be kept up-to-date and thus retain their value.

(e) In addition to producing the sort of handbooks mentioned above it is suggested that the Academy might store information in the form of a library.

(i) it should receive offprints of the publications of its members

(ii) it should invite all scientific workers in East Africa to donate copies of offprints of their papers (together with the appropriate abstracts) to its library

(iii) it should acquire, if possible, a set of at least the more recent reports of work carried out in all laboratories and institutes throughout East Africa (see Science Policy Committee above)

(iv) it should also acquire a set of Directories (and other works of reference) designed to enable it to keep in touch with the scientific community overseas. A suggested basic list is given in Appendix 3.

(iii) The communication of information

(a) In East Africa

(1) The Academy proposes to publish the proceedings of its annual symposia (the Proceedings of its
first symposium held at Makerere in June 1963 have already appeared in print; to these might be added in the long run (and if sufficient funds become available) the publication of an East African Journal of Science which could perform either or both of two possible functions: (a) provide a vehicle for the publication in one journal of original research papers undertaken by workers throughout East Africa,

(b) provide a medium for the publication of papers offered by East African scientists in all fields provided that they had not been published elsewhere or had not been offered for publication elsewhere.

An eventual decision to publish such a journal would have to be carefully weighed against such factors as cost, the prior existence of other scientific journals in East Africa, the danger of adding yet another journal to an already crowded field, and the need to establish and maintain very strict editorial standards.

(ii) In the meantime the Academy could perhaps consider other, more immediately practicable forms of publication:

(a) a list of references to the publications of its members for circulation to other Academies, Associations for the Advancement of Science, etc.

(b) abstracts of papers published by scientific workers throughout East Africa (see above); if a comprehensive and cumulative record of this sort could be produced it would have considerable value both in East Africa and overseas. If such material could be assembled and published in the Academy's Proceedings (in addition, of course, to selected contributions to the annual symposia) it is felt that it would add considerably to the value of this
publication and, consequently, to the demand for and sale of it.

(c) a regular Academy newsletter designed to inform its own members of the activities of the Academy and of its branches and to invite comments and suggestions from members; such a newsletter might well incorporate extended summaries of lectures arranged by the various Branch Committees for members.

(d) a leaflet, for general circulation, setting out the aims and activities of the Academy and incorporating details of subscriptions and a standard form of application for membership. (A specimen leaflet describing the work of the British Association for the Advancement of Science is attached for information as Annex 1).

(e) a "Science News" bulletin intended for circulation throughout the scientific community in East Africa (as well as to appropriate institutions overseas). Such a newsletter would aim at offering a digest of news of the East African scientific community as a whole (i.e. reports of meetings of societies of work being done in research institutes, of visits by scientists from overseas, of developments in science teaching, of items of interest to industry; digests of lectures sponsored by the Academy and by other East African scientific societies and of significant news from abroad).

(b) International Scientific Community

(i) In addition to maintaining overseas contacts by the sorts of publications mentioned above the Academy should act formally as the link between East Africa and
the relevant sections of the international (scientific) community (and especially with the International Council of Scientific Unions, international organizations such as the United Nations and UNESCO, other Academies for Science, and Associations for the Advancement of Science — the latter are listed in Appendix 4). Such links could be developed by seeking opportunities for the exchange of delegates; by the receipt of the publications of the appropriate institutions, and perhaps by the creation of special relationships with sister Academies or Associations. It is believed that while most such institutions are unable to appoint 'Corresponding Members' they would be prepared to make suggestions of people from among their own members who might undertake to maintain individual contact with, and give special advice, when sought, to the Academy.

It would be particularly valuable for the Academy to be able to establish, at this stage, close working relationships with other Academies and Science Associations in Africa (e.g. West African Science Association, Science Association of Nigeria) and, to this end, it is recommended that UNESCO consider making funds available to the East African Academy (possibly from E.P.T.A. funds) to enable it to meet the cost of sending a delegate or delegates to the Annual Conferences of such bodies (or, alternatively of receiving — on a reciprocal basis — the delegates of those bodies). It would also be most helpful if UNESCO could provide, for the Academy's information (to enable it to make the necessary contacts) a list of the names and current addresses of Academies of Science and Science Associations throughout Africa.

(ii) Another possible function of the Academy would be for it to explore, either on its own initiative or in
conjunction with particular societies or individuals, the possibility of developing East Africa as a 'conference centre' for the international scientific community. East Africa not only has much unique research material to offer specialists in various scientific disciplines but great natural advantages of climate and scenery. The Academy, with official - including financial - support from the East African Common Services Organization and the respective Governments might well have an important role to play (given the necessary administrative machinery) in developing, by the organization of meetings and conferences in East Africa, a much wider and deeper understanding of scientific possibilities in the three countries; similarly scientific societies and organizations overseas, assured of the necessary advice and help on the spot, might well be persuaded to finance the holding of particular meetings and conferences in East Africa.

(3) Dissemination of Science to the public

There is only one really effective way of interpreting science to the public and that is to bring together members of the public and scientists and others actively engaged in research to exchange views which are not filtered through the printed page or loudspeaker or TV screen but under conditions where there can be a 'feed-back' between speaker and audience. But 'Public' is a very general term which requires more precise definition if effective action is to be accomplished.

(1) Intelligent non-specialist

This group comprises educated, professional people without any specialist training in science or technology (teachers, business-men, journalists, account-
ants, industrialists etc.). A very important sub-group within this general category are all those (e.g. Civil Servants, members of the legislature) who contribute to decision-making and who, without some understanding of science and technology, will find it difficult to make rational decisions in a science-dominated society. There would be real value in the organization for individuals in this category of seminars, courses of lectures, or even single lectures, aimed at elucidating the significance of science in policy-making, of modern developments in science generally and of particular applications in East Africa. Such lectures would have especial value, of course, if they could be related in some direct way to the professional responsibilities of those attending them.

For the educated laymen generally the Academy could run, through its Branches, programmes of single lectures. Special care would be needed in planning such lectures (as well as the seminars suggested above) to ensure that the speakers were not only skilled exponents in the art of presentation but were also able to adapt their subjects to the audiences they were facing (and it may be worth noting in this context the importance of choice of a suitable title: a bad title may discourage the potential audience, however able the lecturer is and however fascinating his material may be!).

Another means of reaching the so-called intelligent lay public would be for the Academy (through its Branch Committees) to provide speakers on scientific topics for professional clubs and organizations (e.g. Rotary) which can provide their own ready-made audiences.

Again (and in the same context) a task which the
Academy could usefully undertake, in its co-ordinating role, would be to set up and maintain - both centrally and through its Branches - lecture panels which would aim at providing speakers for a variety of organizations (including those in the field of education); this would help to avoid a situation in which too many organizations were 'chasing too few speakers' and could well be a real service both to the individual speaker and to the 'user' organizations.

(ii) **Young People** (in Schools, Technical Colleges, Teacher Training Colleges and Universities)

There are a number of activities which could be contemplated: in all of then the underlying aim would not be to teach science (that is the function of the schools etc.) but to give the young people concerned a chance to meet and talk informally with practising scientists, to stimulate the imagination and to stress the excitement of science and the adventure of scientific discovery. This whole field is of especial importance since the future of science and learning in East Africa will depend on there being a sustained and growing supply of young people interested in careers in science and technology. Possible activities are summarized below:-

(a) **Junior Academy Meetings**

The meeting might last two days and could appropriately be staged within one of the University Colleges: it would include illustrated lectures, a programme of scientific films and perhaps a 'brains trust'. A special programme of this sort might perhaps first be attempted in conjunction with the Academy's Annual Conference. A programme of a typical Junior British Association Meeting is attached as Annex 2.
(b) School Science Exhibitions (or 'Science Fairs')
which not only young people but their parents and other
interested adults would be invited to attend. (See Appendix 5
for a descriptive note on Science Fairs in the United Kingdom
and Annex 3 for a specimen programme). It may be of interest
to note that similar 'Fairs' have been arranged by the Pakistan
Association for the Advancement of Science and that a prototype
'Fair' has been held in Kampala, Uganda, under the auspices
of the Uganda Science Teachers Association.

If at a later stage it becomes possible for one or other
of the Branches to attempt programmes of this sort, then it
will become necessary for the Branch (following the Academy's
general co-ordinating role) to go outside its own membership
for help and advice. This for two main reasons:
(i) The Branch itself, with its slender resources in man-
power and secretarial services, could clearly not undertake
the major task of organization involved.
(ii) Other institutions and individuals may already be
actively engaged in the field.

Such a programme could best be initiated, therefore, by the
Branch sponsoring a meeting of all the interested bodies
(Universities, Education Authorities, Science Teachers,
Professional Societies, Museums, Professional Clubs and other
community organizations) at which the Academy's proposals
could be generally discussed and, if approved, the opportunity
could be taken to set up a continuing executive committee
under the Branch 'umbrella'. At such a meeting representa-
tives of the 'providers' (i.e. organizations who can provide
speakers, meeting rooms etc.) would be essential - since
only they would know how much was being done already - as
would representatives of the 'consumers' (i.e. Schools
and Community groups) since they would spread the news of
the service proposed and create a demand for it. If such
a programme were
felt to be desirable perhaps a pilot experiment could be tried in a selected Branch area. The problems that would arise would be:

(i) Finding people with time to serve on the directing committee and (ideally) with the secretarial resources of their own organizations behind them

(ii) Finding speakers to undertake the necessary lecture programmes, material for film programmes etc.

(iii) Finding funds to guarantee the committee essential secretarial services and, if it were a question of a Science Fair, to make grants (for equipment, transport etc.) to enable the Fair to be arranged, to pay for publicity, printing of leaflets etc.

(c) Lectures

The provision of lectures for single schools or, where possible and in the interests of economy, for a joint and larger audience provided by a number of schools in an area coming together for the occasion.

(d) Scientific Films

The arrangement of programmes of selected films, either in conjunction with the events listed above or for circulation, as 'packaged programmes', throughout schools in selected areas; it would perhaps also be helpful to science teachers and others if screenings of films could be arranged from time to time so that they could see what was available and where the films might be obtained. Initially, perhaps, the Academy's contribution in this context could be to prepare, for distribution to potential 'consumers', a list of all the film material available in East Africa which would indicate how, from whom and on what terms films could be borrowed.
(e) School, Training College and Teachers! Visits to Research Institutes, Laboratories, Industrial Premises, etc.

Again, the Academy - perhaps centrally in the first place and later through its Branch Committees - could offer to co-ordinate opportunities in this field by ascertaining from potential hosts the dates on which they could receive school parties (and the numbers they could take) and by arranging visits, when requested to do so, on behalf of 'user' organizations (e.g. Schools, Colleges, educational organizations). This again would be a very useful common service in the sense that it would mean that 'host organizations' would only have to deal with one 'user organization' and that 'users' might be saved a good deal of fruitless effort and correspondence.

(f) Field Trips, etc.

Members of the Academy could perhaps, at Branch level, offer a consultancy service (on a purely personal basis) to science teachers by way of giving advice on such things as the use of equipment in school science laboratories, the arrangement of field trips and excursions for school and college parties - with special reference to local fauna and flora, geology etc.

(iii) General Public

The only way of reaching the mass audience implied by 'general public' is, perhaps, through the mass media (Press, radio and television) - and this implies, first, the need for continuing liaison by Officers and members of the Academy, through its Branches, with the authorities concerned to achieve a greater allocation of 'space and time' to news and background articles and programmes on matters of scientific interest and especially of local interest and application; and, second, the support of
members willing to devote their time and energy to the
preparation of suitable material. Exhibitions, in
museums and elsewhere, are clearly also of continuing
value but the Academy could hope to do little directly
here except in its role of adviser and co-ordinator.

F. STRUCTURE AND ORGANIZATION

I. GENERAL

(1) The success of any voluntary Association such as
the East African Academy will depend very largely on
such factors as the straightforwardness of its objectives,
the simplicity of its organization and the quality and
number of the people who devote themselves to it. Any
attempt to advise on the working of the Academy and on
its possible future activities must, therefore, be
preceded by some consideration of its formal structure.

In broad terms the Academy must expect to act,
through the machinery provided by its Council, Committees
and Branches, as a channel for the ideas and energy of
the members of those groups; it must expect to initiate
policies and to serve as a stimulus to agreed action
rather than as an executive instrument, it must
co-ordinate and combine; and to do all this it must
draw its strength from all parts of the scientific and
professional community.

(2) Given this framework for policy, what of the
physical framework within which 'policy' must be enacted?
There are obvious problems here:

(i) the territorial representation envisaged in the
Constitution (with Branches in Kenya, Uganda, Tanganyika and Zanzibar) is clearly both necessary and desirable but it gives rise to obvious administrative problems: Councils and Committees must meet regularly if they are to be effective and this implies, in view of the distances involved, the need for substantial expenditure on travel just to keep the machinery running.

(ii) the second potentially limiting factor is that of people (not only to give life to the Branches and to the Council and other Committees but also to contribute in other ways to the Academy's membership and work) - for without devoted individuals prepared to give freely of their time and energy a gap must necessarily develop between 'intention' and 'fulfilment'.

Let us consider the problem of organization first, therefore, at the Academy (as opposed to the Branch) level.

II. THE CENTRAL STRUCTURE OF THE ACADEMY

While the proliferation of committees is clearly not to be undertaken lightly it is felt that the effectiveness of the Academy as an instrument for purposive action could be increased by a strengthening of its committee structure. This for the reasons of 'policy' given below and because small committees, in view of the unavoidable geographical dispersion of membership and potential effort, are likely to be weak committees.

(1) Section Committees

The territorial representation laid down in the Constitution is essential but it is felt that it cannot
be enough in itself - that it would tend to be sterile, with insufficient roots in the actual work of scientists and too limited to get effective programmes going. The Branches will tend to be (or become) purely administrative units whereas the Academy, if it is to grow strong, must clearly receive continued nourishment from the community of practising scientists. It is suggested, therefore, that the Council should consider using the powers granted to it by the Constitution to bring formally into being (and re-appoint annually) Section Committees representative of the main fields of the Academy's activity: it is felt also that it would be highly desirable to establish a separate Section for the Applied Sciences (for the solution to many of East Africa's immediate problems will demand varied experience and many skills and to exclude the 'applied scientists' from the Academy's work would, it seems clear, be to deny itself a vital source both of knowledge and help). There would then be five Section Committees: for the Physical, Biological, Social and Applied Sciences and for the Humanities and the Arts. By associating scientists in its own field with the work of the Academy on a voluntary basis each Section would thus be able by the range of its contacts to ensure effective planning of programmes (see below) and to speak with authority on problems which concern it and on which it might wish to seek the support of the Council.

Each Committee would have a Chairman (appointed in the first place by the Council, and nominated thereafter - for appointment by the Council - by the Section Committee itself) and one member nominated initially by each Branch Committee (it would be desirable, thereafter, for the
Section Committees to nominate their own members, providing only that in doing so they took account as far as possible of the need for each Committee to be represented on each Branch Committee; each Section Committee would nominate one of its members annually to represent it on the Council of the Academy; each Section Committee should also be represented by one member on each of the Council's Standing Committees. Some notes on the sectional organization of the British Association are attached, for information, as Annex 4.

It is appreciated that the present relative scarcity of graduate workers in the different academic disciplines may well make it impracticable to implement this proposal (for the creation of Section Committees) for some time to come; indeed, as suggested above, it would seem more desirable to encourage the natural growth of separate specialist societies than to attempt prematurely to organize the Academy in terms of rigid and formal disciplines. Nevertheless a 'sectional' structure should be the Academy's eventual aim and it is encouraging to note that its Council has already resolved that some of its principal standing committees should formally include representatives of the main Sections for which provision is made in the Constitution.

(2) **The Council**

(i) While it may not yet be possible to envisage the creation of a basic sectional structure within the Academy it is suggested, for the reasons given above, that the Council should be strengthened by the addition of one representative of each of the five (proposed) Section Committees.
(ii) It is also suggested for consideration that provision might be made for the election (on the nomination of the Council itself) of up to six ordinary members: this would enable the Academy formally to associate other organizations and institutions (such as the Universities, other societies, industry, etc.) with its work and thus widen its 'operational' area: ordinary members should, however, be invited to serve in their individual capacities, not as nominees of particular institutions.

(iii) The Council meets twice a year (once on the occasion of the Annual General Meeting). The cost of holding such meetings is substantial; even so, it is suggested that the Council should, if at all possible, be convened more often - at least three, and preferably four times a year.

(3) The Executive Committee

In view of the relative infrequency of Council meetings and of the geographical isolation of Branches, much of the driving force of the Academy - both in the initiation of policies and in their implementation - will tend to be centred in the Executive Committee. It is suggested, therefore, that both the membership and the powers of the Committee be strengthened:-

(i) Membership

By ensuring that each of the Section Committees envisaged by the Constitution is represented on the Executive Committee and (see 'Officers' below) by the addition of two Honorary Secretaries.

(ii) Powers

The Executive Committee should be charged, in addition to its existing functions, with:-
(a) Consideration of proposals for expenditure and making recommendations thereon to the Council

(b) Preparing annually for submission to the Council estimates of income and expenditure for the following year and making recommendations as to the allocation of expenditure

(c) Keeping under review the income of the Academy and making recommendations thereon to the Council.

(iii) Meetings

The Committee ought to meet regularly - if possible once a month and certainly not less than once in three months.

(4) The Officers

It is suggested that there would be great advantage in a wider delegation of responsibility for the Academy's affairs: one step which might be taken is the appointment of two additional Honorary Secretaries who, together with the President, Treasurer and present Secretary, would act as the Officers of the Academy. One of the Secretaries could then be a 'Scientific' Secretary, one would be responsible for liaison with Branches, and one for overseas liaison.

(5) Standing Committees

(i) The Sections (see above) should be represented on each of the Council's Standing Committees.

(ii) Each Committee should be self-governing within its present terms of reference except that its expenditure of the Academy's funds should be governed by the rules (see section V, 'FINANCE', below) proposed for the control
of the finances of the Academy as a whole. Generally speaking each committee should have authority to finance its activities within the limits of a budgetary allocation made annually by the Council on the recommendation of the Executive Committee; no committee should involve itself in liabilities in excess of this annual allocation without seeking prior authority from the Executive Committee.

(6) Programme Committee and Programme Planning

It is recommended that the Council, whether or not it regards as relevant the ideas about the aims of the Annual Conference which have been set out above, should establish an additional standing committee with responsibility for the planning of the scientific programme of that meeting:

(i) The committee should consist of the Academy's officers (as defined above), at least one representative of each of the five (proposed) Section Committees, and one representative from each of the Branch Committees.

(ii) The Programme Committee would be responsible for determining the dates of the Annual Conference; for the determination of the scientific programme (and for issuing the necessary invitations to speakers: a set of specimen forms designed for issue to invited contributors is attached as Annex 5), and for deciding whether or not to arrange (as suggested above) a separate programme - to run concurrently with the Conference - for students.

(iii) The dates of the Conference should, if at all possible, be agreed not less than a year ahead so that sufficient time is then available for
making the necessary local arrangements, for working out the programme and inviting speakers, and for undertaking the necessary publicity both within the membership of the Academy and outside it.

(iv) The appropriate Branch Committee should be responsible for the local arrangements for the Annual Conference (reservation of meeting rooms, arrangements for residential accommodation for visitors, planning of a programme of excursions and social functions, local publicity, provision - if required - of facilities for the Press).

Some detailed notes on the local organization of British Association Annual Meetings are attached, for guidance, as Annex 6.

(v) The Central office of the Academy, through its executive staff, should be responsible - in consultation with the Programme Committee and the appropriate Branch Committee, for all correspondence with members and others planning to attend the Meeting (including the issue of circulars about the Meeting, reservations of living accommodation, provision of programme of the Meeting etc. etc.).

(a) A preliminary circular giving place and date of the meeting, some indication of the subject of the scientific programme, details of the accommodation available (and an application form for accommodation) etc. should be circulated to all members (and other Societies, Research Institutes, Ministries, Universities, educational institutions, and industrial concerns) not less than six months
before the Meeting. A specimen of the British Association's Preliminary Programme is attached as Annex 7.

(b) A second circular, giving details of registration, excursions, social functions, confirmation of accommodation etc. should be sent - together with a copy of the programme of the meeting - to all persons who have indicated their intention to attend not less than a month before the Meeting. A specimen of the British Association's Final Programme is attached as Annex 3.

(vi) It is felt that early and widespread publicity about the Annual Meeting (and this applies also to all other programmes undertaken by the Academy, either centrally or through its Branches) is essential if institutions and individuals are to be encouraged to participate.

(vii) One final suggestion is made, namely, that at some appropriate time in the future, consideration might be given to inviting other scientific societies in East Africa to participate in the planning of one of the Academy's Annual Conferences - co-operation invited in this way could clearly make possible a very strong programme (possibly on a major theme of East African interest) and, by assuring the support of other interested groups (and their members), ensure a large attendance and a major impact on the scientific and public community at large.
III. BRANCHES

(1) The role of Branches

The Council will clearly have to be responsible, as the governing body of the Academy, for making policy, for giving a sense of direction and of purpose to the Branches, and for providing a central office and Secretariat. At the same time the inter-territorial structure of the Academy makes it imperative that the Branches should be active, living organisms - nourished by the parent body but free to determine their own patterns of activity in the light of their own circumstances. And these circumstances, to give but two examples, vary considerably: first, most of the research stations and institutes administered by the East African Common Services Organization are sited in Kenya which means that the Kenya Branch has, in principle, a well established and much larger scientific 'population' to depend on in the planning of its activities; second, science teaching at the University College, Dar es Salaam (in physics, chemistry, botany and zoology) will formally begin in July 1965 so that it will be some time before the output of science graduates is sufficient to support in any major way the 'natural' as opposed to the 'social' science side of the Academy's activities.

Broadly speaking the objects of the Branches should be:

(i) To further the objects of the Academy as set out in its Constitution throughout the Branch Area.

(ii) To arrange within the Branch Area such meetings, conferences and programmes as are considered desirable for members of the Academy resident within the Branch Area.
To these objects could be added:

(iii) Subject to the general approval of the Council to arrange within the Branch Area meetings, lectures, demonstrations, exhibitions and other activities and events to which persons not being members of the Academy may be admitted either with or without charge and for such purposes to appoint Chairmen and engage or appoint speakers and such other officials as the needs and interests of such occasions shall require.

(2) Organization of Branches

Possible activities of the Branches have been discussed elsewhere (Section D: "The role of the Academy and a survey of possible activities") so that attention may now be concentrated on the measures needed to make the Branches effective operational and administrative units.

(i) It seems clear, first, that a Branch will be unable to function usefully without the continuing support of officers and members dedicated to its service. There would seem to be considerable variation at the moment in the strength of the different Branch Committees and it is felt to be essential that they should consider, as a matter of some urgency, how to assure themselves of greater individual support. A first step would be to plan a campaign to recruit new members, but to succeed in this (and to retain the support of existing members) implies the need for incentives in the form of a positive programme of activities, a sense of purpose (related to the Academy's overall aims and objectives), and other inducements in the form, perhaps, of receipt of the Academy's annual 'Proceedings' in return for the annual
subscription.

(ii) Nor, as a corollary, can a Branch hope to function without an active committee - and, more particularly, without officers who have the time to devote themselves to the furtherance of the Committee's work. The problem - it hardly needs to be re-stated - is that in a situation where there is a relative scarcity of qualified people the demands on the able and interested ones are excessive; the further problem arises in this context of ensuring continuity of service: a number of the very able and dedicated officers already serving the Academy are, for obvious reasons, working in professional situations which imply the need for academic mobility; this being so it becomes even more urgent to ensure a wider human base for Branch activities so that problems of succession to the various offices (especially those of Secretary and Treasurer) will be less critical when they arise.

(iii) Problems of Branch administration and of continuity in office will be somewhat eased if each Branch Committee can assure itself of at least minimal secretarial support. The use of one room with a telephone where all files can be permanently housed (and made available to all officers of the Branch) and where a part-time secretary can meet officers and deal with Branch business would have very considerable value. The cost of renting such accommodation and employing a secretary may at this stage in the Academy's affairs be insuperable but perhaps other solutions are possible: first, the existing Branch Officers may be able to arrange for one of their own offices to be used for such a purpose and to persuade a suitably qualified person to
undertake the duties of part-time secretary partly as a matter of good-will and partly in return for an honorarium; alternatively, it would seem to be worth exploring the possibility of negotiating for the sharing of the secretarial facilities of an existing Society which has its own permanent accommodation and staff.

(3) **Measures designed to strengthen Branches**

Branches, to sum up, will need a good deal of support and encouragement in the immediate future; some suggestions follow:

(1) The Academy should convene a meeting (or meetings) designed to give the President and Officers the opportunity to discuss with Branch Officers their functions and duties. It would be necessary to prepare a full brief for consideration at such a meeting covering:

- the role of the Council and its Committees vis-à-vis the Branches. Since the primary necessity would seem to be to make the Branches fully aware of the Academy's 'thinking' and plans for future activities it might well be useful for such of the proposals made in this report as seem to have merit to be outlined and discussed — and, where appropriate, submitted to Branch Committees for consideration and action;
- the formal responsibilities of Branches — detailing the various duties laid on them by the Constitution (e.g. timing of their annual meetings, election of Council representatives, preparation of estimates and accounts (and auditing of accounts), election of Branch Officers, collection of membership subscriptions and remission of them to the Treasurer of the Academy, advice on keeping of Branch accounts, etc. etc.).

It is also suggested that there should be some discussion of the whole question of eligibility for
membership of the Academy since there would appear to be some variation at present in the criteria applied by the different Branches in dealing with applications for membership.

(ii) Provide regular opportunities for discussion of Branch problems by the appointment (see above) of an Honorary Secretary charged with liaison with Branches and by requiring the Executive Officer to make regular visits to meet Branch Officers.

(iii) Provision of an annual grant to enable the Branches to pay for essential secretarial services (typing, use of office, telephone calls etc.). The Academy itself could provide appropriately headed stationery for the use of all Branch Committees.

(iv) Circulation (under confidential cover if necessary) of minutes of the Council and of its Standing Committees to Branch Secretaries so that they will be able to keep members of their Committees fully informed of policy and programme developments.

(v) Circulation of a newsletter to all members to keep Branches informed of the Academy's thinking and to encourage, by example, a sense of unity, common purpose, and perhaps even rivalry. Branch Officers will themselves have to contribute, of course, to the preparation of the newsletter by the regular supply of information on their own activities.

(vi) Encouragement of Branch membership by making the printed Proceedings freely available to members (except students) in return for their annual subscriptions. It is felt that the supply of the Proceedings to members without extra charge would be a desirable step to take
despite the possible financial implications: if the Academy feels unable to adopt this suggestion it is recommended that the Proceedings be made available free of charge at least to:

(a) Institutional Members
(b) Members who have paid annual subscriptions but who are unable, for one reason or another, to participate in the annual symposium.

The regulations of the British Association's Branches are attached, for information, as Annex 9.

IV. CONSTITUTION

(1) A number of proposals made elsewhere in this paper (e.g. the creation of Section Committees, the strengthening of Council and the Executive Committee etc.) will, if adopted, require amendments to the Constitution and/or the Bye-Laws.

(2) A number of other comments on the Constitution are also submitted for the Academy's consideration:-

(i) The Constitution does not appear to specify the governing body of the Academy - presumably the Council?

(ii) Arising out of this point, the Constitution refers to the Annual General Meeting and to members present having voting rights but does not indicate clearly what the powers of the Meeting are - apart from the election of Fellows and Honorary Fellows and of the President, Secretary and Treasurer. The following positive functions could perhaps be added:-

(a) To receive and consider an Annual Report of the Council and the Treasurer's Annual Report and Accounts.
(b) To elect the Council of the Association (i.e. the Officers and members of the Council shall be nominated as provided for in the Constitution but elected by the Annual General Meeting).

(iii) The Constitution defines the 'Meetings of the Academy' as the Annual General Meeting or Extra-Ordinary General Meetings but appears to make no reference to an annual symposium or conference. It is felt that, since the Annual General Meeting is largely a business meeting (to elect Officers and receive reports), there would be some positive virtue in making the annual symposium mandatory. Such a constitutional requirement - to hold a 'programme' meeting each year - would tend to strengthen both the Academy's sense of purpose and its public image (in terms of its stated aims and objects).

(iv) The Constitution does not appear to define such things as the powers and duties of the President, Treasurer and Secretary - or indicate the period of their service and the conditions under which they may be eligible for re-election; nor does it appear to delimit a term of service for members of Council, of its Committees and of Branch Committees. A three year term of service, subject to annual re-election, might be considered appropriate.

(v) Article IV(2)(d)(ii) and (c)(ii) say that the 'rights and privileges' pertaining to those memberships shall be in every respect the same as for 'ordinary membership' but there appears to be no prior definition of the privileges of ordinary membership. It is suggested above that receipt of the printed Proceedings, free of charge, would be a desirable privilege.
(vi) Finally, it is suggested that if any amendments to the Constitution (as now written) are undertaken there would be some virtue in the re-arrangement and bringing together of the matter now contained in it and in inviting someone with legal training to undertake the necessary final drafting.

A copy of the Statutes of the British Association for the Advancement of Science is attached as Appendix 10.

V. FINANCE

(1) General

The value of the services, both tangible and intangible, which the Academy renders to the community will depend significantly on its financial independence - for without such independence it will find it difficult either to adhere to its natural role as a source of impartial judgment on matters of scientific fact and policy or to support even the minimum administrative 'machine' essential to the fulfilment of its aims. Financial independence as such, is not everything, however, for a single source of finance would tend to make the Academy (or any other voluntary association of its kind) unhealthily dependent on that source. It is hoped, therefore, that the Academy will seek, and obtain, help from a variety of sources (e.g. Governments, International Organizations, Foundations, Industry - as well as from its own membership) and in a variety of ways (e.g. provision of premises, equipment, books and periodicals, travel grants, grants for special projects etc.).

(2) Appeals for Funds

It is suggested that special care be taken in the determination of immediate needs and that appeals for
help to particular (potential) donors be related to particular needs; appeals planned in this way are more likely to be productive than very general appeals for financial support. Thus, if it is decided at a later stage to undertake new programmes aimed at young people and 'public' audiences generally it is suggested that industry, with its clear interest in anything designed to stimulate an interest in science and in careers in science and technology, would be the appropriate target for an appeal for funds to launch such programmes.

Another point to be borne in mind is that since 'letters of appeal' are on the whole easy to ignore, fund-raising is much more likely to be productive if conducted on a personal basis. Once a specific set of proposals had been worked out an appeal to industry, for example, might be best initiated by the President and Officers of the Academy (supported as appropriate by the Branch Chairmen and Officers), inviting a small group of major industrialists to dinner to discuss plans informally and to invite their support; success at this stage could then be followed by a wider written appeal.

(3) Establishment of Secretariat

The Council of the Academy has already decided to appoint a full-time Executive Officer to undertake the administration of the Academy's affairs and it is recommended, therefore, that the first charges on the general funds of the Academy (and of any new funds now raised) be:-

(1) The establishment of a permanent Secretariat (Executive Officer and stenographer, plus office premises and equipment)

(ii) The provision of travelling expenses and
subsistence allowances (on an agreed scale which should be specified in an instruction approved by the Council) to enable the Council and Committees to meet at intervals which are not so prolonged as to hamper the necessary prosecution of their business.

(4) **Financial Procedures**

A number of points affecting the control of the Academy's finances have been made elsewhere in this paper; to these are added the following suggestions:

(i) That in preparing the annual accounts all funds given for specific purposes should be shown separately under the heading of 'Special Funds' and not as part of general income and expenditure. If this is not done it will be difficult to determine what funds are, in fact, currently available for general purposes.

(ii) That the financial procedures laid down in Article IX of the Constitution be amplified in some such sense as follows:

(a) Estimates of income and expenditure should be prepared each year for the period of the ensuing financial year at the appropriate time. These estimates to be submitted to the Treasurer and the Executive Committee each year for consideration and approval.

(b) Estimates of expenditure should be drawn up under appropriate headings following in general the arrangement in the annual statement of accounts.

(c) Prior approval of the Treasurer or the Executive Committee must be obtained before expenditure is incurred on any item not provided for in the approved estimates.
(d) The transfer of unexpended funds from one heading of estimates to another can only be made with the approval of the Treasurer or the Executive Committee.

(e) If the amount under any heading in the approved estimates appears to be insufficient to meet expenditure for the whole year this must be reported to the Treasurer or the Executive Committee at the earliest possible date and before any further expenditure is incurred under this heading.

(iii) That the Treasurer should be responsible, once a full-time Executive Officer has been appointed and the central Secretariat is working smoothly, for collecting all membership subscriptions and for re-funding the appropriate proportion to Branches. It is felt that this reversal of present practice, if agreed, would not only relieve Branch Officers of an onerous administrative task but would make it much easier for the Treasurer to discharge his budgetary and other tasks more effectively.

Until such time, it is agreed that Branch Treasurers should continue to be responsible for the collection of membership subscriptions and for accounting for them to the Treasurer of the Academy. It is essential, in this context, that all Branches:

(a) should employ a standard form of application for membership

(b) should issue subscriptions reminders when necessary and complete the collection of all outstanding subscriptions some months before the Annual General Meeting

(c) should keep the Treasurer of the Academy informed of the names and addresses of all members in current subscription.
(iv) That the Treasurer should investigate the Academy's legal liability for such things as tax on subscriptions and donations: it may be that the Academy, as a recognised Scientific Society, can claim exemption from tax on the whole or part of its income.

(v) That the Treasurer should consider what financial responsibilities may be properly delegated to the Executive Officer (e.g. for the keeping of day to day accounts, signing of cheques up to an agreed amount). This raises a further general point for consideration. The Constitution says that "all cheques on the bank account ..... shall be signed by the Treasurer or Branch Treasurer and one of two other office bearers appointed by the Council or Branch Committee as the case may be". It seems likely that this requirement may give rise to certain practical difficulties, at least as far as the Treasurer of the Academy is concerned:

(a) if, as may well happen, the Treasurer has to travel abroad it will be impossible for the correct financial procedures to be followed and the efficient conduct of the Academy's business may well be prejudiced.

(b) the signing of all cheques, however small, will tend to put an unnecessary burden (in terms of detailed accounting) on the Treasurer—a burden which could more appropriately be carried by the Executive Officer.

A possible solution to these difficulties would be as follows:

(a) incorporate an amendment to the Constitution in some such words as these: "The Treasurer, subject to the approval of the Council, shall make such regulations for
making such payments as aforesaid including the signing of any cheques as he may from time to time think fit".

(b) draft special regulations (for approval by the Council) covering the signing of cheques. The detailed terms of such regulations must, of course, be left to the Academy's discretion but they might with advantage cover the following points:

(i) The Executive Officer be authorised to sign cheques up to (say) 100 shillings.

(ii) Cheques between 101 shillings and (say) 2000 shillings to be signed by the Executive Officer and the Treasurer, or in his absence by the President or Secretary.

(iii) Cheques over 2000 shillings to be signed by the Treasurer and one of the two office-bearers, or in his absence by the President and Secretary.

If the Academy decides to revise its cheque-signing procedures it will be necessary for copies of the relevant resolutions of the Council, and of any special regulations which are adopted, to be sent to the Bank, together with copies of the signatures of those Officers authorized by the regulations to sign cheques.

VI. SECRETARIAT

(1) Need for Executive Officer

While much of the Academy's effort, and of its value to the community, will necessarily derive from the voluntary services of its members and others - services which, though they cannot in any real sense be 'costed', will be indispensible - it is not to be expected that honorary officers will themselves be able to undertake on a continuing basis the day to day administration of the Academy's affairs. It is, therefore, regarded as
essential, (and the Council of the Academy has itself already come to this decision) - if the Academy is to undertake the tasks which it has set itself - that provision should be made as soon as possible for the appointment of an Executive Officer (supported by a competent full-time stenographer) and for the necessary office accommodation. It is felt to be essential - if the Academy's standing is to be recognised and its operational efficiency is to be encouraged - that its headquarters accommodation (however limited it may be initially) should be of good quality and in a central (accessible) situation in Nairobi.

The Executive Officer will not only have to bring into being (and develop) the administrative machinery needed for the efficient running of the Academy's affairs but will have to act, for the Academy's officers, in a great variety of situations involving both correspondence and personal negotiation. He ought, therefore, to have not only some administrative experience (or the capacity quickly to acquire it) but judgment and the ability to come to sound decisions. It is clear that the Academy faces a crucial problem here: first, the political and economic development of East Africa will put a premium for some long time to come on the services of all able young graduates; second, the Academy is unlikely to be able, for the time being at least, to offer the salary level and career-prospects likely to be open to suitable candidates in such fields as Government service and industry.

(2) **Recommendations concerning the appointment of an Executive Officer**

In this situation it is recommended that the East African Common Services Organization, and through it the
three Governments, be invited by the Academy to examine ways in which it might be able to help the Academy to recruit a suitably qualified permanent Executive Officer. Another possible, but only interim, solution would be for the Academy (with the official support of E.A.C.S.O.) to seek the help of one of the international organizations (i.e. UNESCO through the regional Technical Assistance Programmes) in securing the appointment, for a period of one to two years, of an appropriately qualified Officer who would be responsible both for establishing the projected Secretariat and developing the Academy's work and for training a young African graduate appointed by the Academy to take over from him on the completion of his appointment. It is noted, in this context, that UNESCO is shortly to establish (in Nairobi) a Centre for Science and Technology in Africa south of the Sahara. While the Centre will obviously have its own well-defined tasks and objectives it is to be hoped that it will, by reason of its very presence in Nairobi, be able through its staff to offer moral if not material help to the Academy.

G. SECRETARIAT AND ADMINISTRATION

I. GENERAL REQUIREMENTS

(1) Staff

At the present stage of its development the Academy will require, at the very least, an Executive Officer, supported by a first-class secretary/stenographer. If the Academy is to develop in the ways suggested in this report, however, additional staff (and premises) will be required to enable it to expand its activities both centrally and at Branch level: it is foreseen, in particular, that the Executive Officer will have to be supported during the next year or so by the appointment of a fully qualified administrative assistant and at least one further clerk/stenographer.

(2) Accommodation: One room for the Executive Officer which is spacious enough to accommodate meetings of small committees. One room for the secretary which is large enough to house essential office equipment and to provide space and working surfaces for clerical tasks.
(3) **Furniture and Equipment**

A list of essential items is given in Appendix 2.

II. **EXECUTIVE OFFICER: TERMS OF REFERENCE**

The Executive Officer shall hold office during the pleasure and under the general direction of the Council. The Council through its Officers and the Executive Committee must be responsible for all matters of policy and the Executive Officer's responsibilities, subject to the day to day guidance and supervision of the Secretary and/or Treasurer may, therefore, be broadly defined as follows:-

(1) The general organizing and administrative work of the Academy including day to day correspondence

(2) The control and direction of the Office and of all persons employed therein

(3) The preparation of agenda and papers for meetings of the Academy, including those of the Council and its Standing Committees; making records of those meetings and taking action on Council and Committee decisions

(4) The execution of all directions and orders given to him by the Council and/or the Executive Committee and/or the Officers.

III. **EXECUTIVE OFFICER: DEFINITION OF RESPONSIBILITIES**

The first person appointed to the post of Executive Officer will be unable to draw on the accumulated experience of any predecessors in office. While he will after a time develop his own judgment of the relative importance of the situations and matters he is called upon to deal with, it will clearly be desirable at first for the Academy's Officers and/or Executive
Committee to exercise fairly close and detailed supervision of his work. It would be especially helpful if the Executive Officer were provided, on taking up his duties, with a general directive defining the extent (and limits) of his duties (see below) and competence. Such a directive would give guidance on:

(1) The Executive Officer's competence to deal with correspondence (i.e. on what matters is he expected to consult the Officers; whether he is authorized to draft and sign all outgoing correspondence or whether he is to submit draft letters and documents for approval; whether he is to submit draft minutes of meetings for approval or not, and to whom).

(2) The Executive Officer's competence in regard to financial matters (i.e. is he empowered to sign cheques and, if so, up to what amount) and the extent of his responsibilities for the keeping of day to day accounts.

(3) The Executive Officer should have easy and frequent access to the Honorary Secretary and Treasurer and, if necessary, to other members of the Executive Committee and this is most likely to be achieved if arrangements are made for a set meeting (on dates previously agreed) in the Academy's office - say once a fortnight.

IV. EXECUTIVE OFFICER: DUTIES

(1) General

(i) The Executive Officer's first task on appointment should be to make himself thoroughly familiar with the Constitution and the Bye-Laws of the Academy and with its history, membership and activities as recorded in files, minutes and memoranda.
(ii) If the Executive Officer is to carry out his duties efficiently he must be apprised by all Officers of all matters concerning the Academy which they undertake. It will, therefore, be desirable for all Officers (of Council, Branches and Standing Committees) to send copies of all letters (and documents) they initiate (or receive) and of replies received (or sent) to the Executive Officer for his information and/or action.

(iii) The 'operational' notes which follow are necessarily in summary form and it is suggested that arrangements should be made for the Executive Officer, when appointed, to receive more detailed instruction in some of the technical aspects of his duties (e.g. the keeping of accounts, filing systems etc. etc.). The Academy already commands much good will and it would be relatively easy for such instruction to be arranged.

(2) Correspondence

In dealing with any business or correspondence between meetings the Executive Officer must act according to the instructions of the Officers and the general policy of the Academy. If in doubt he should consult the appropriate Officer (usually the Secretary) before taking action.

(3) Meeting Procedures

(1) The Executive Officer should make all the arrangements necessary for meetings (including the determination of date, reservation of the necessary rooms) in sufficiently good time to allow him to circulate the agenda and papers for the meeting (to all entitled to receive them) with due notice. The notice of the meeting should state when, on what day, and where it is to be held and the agenda should have been approved
by the Chairman of the Committee concerned before it is finally prepared for circulation. The Executive Officer should, if required, also prepare an annotated agenda for the Chairman, giving him full and up-to-date details of the business to be discussed.

(ii) It is the duty of the Executive Officer to ensure that nothing that should be brought up at a meeting is forgotten; he should therefore have a folder for the meetings of each Committee into which he can put any letters, or notes of matters requiring discussion or decision; he should refer to this folder in preparing the draft agenda referred to above.

(iii) The Executive Officer should have by him at meetings all the relevant correspondence and papers (arranged in the order in which they occur as items of business on the agenda, and clearly marked for reference); he should also have available all other files or information which may be needed for reference during the meeting.

(iv) The Executive Officer should write the minutes as soon as possible after a meeting, having taken notes during the meeting, in a book kept for this purpose. Minutes are a record of Resolutions passed at a meeting; they should be clear to anyone reading them and all decisions should be recorded, omitting all irrelevant matters. A full note on the preparation of minutes is attached as Appendix 6.

(v) A draft of the minutes of each meeting should be shown to the Chairman/Secretary of the Committee concerned for approval; an agreed version should then be prepared and circulated without delay to all entitled to receive it.
(vi) The minutes having been approved, the Executive Officer should carry out the Committee's instructions without delay and initiate any correspondence made necessary by those instructions.

(vii) One copy of the minutes should be kept in a special minute book provided for the purpose and presented to the Chairman for signature at the start of the next meeting of the Committee.

(viii) The minutes of meetings of the Council, in particular, should be indexed and the index kept up to date. A separate complete set of minutes should be kept for this purpose so that the minute book with the signed copies in it can be kept safely - since it is the formal and confidential record of the Council's business - in a separate place.

(4) Records

The Executive Officer will be responsible for establishing and keeping up to date all records necessary for the efficient administration of the Academy's affairs, including:

(i) A list of members (see 'Office Procedures' below for the method proposed).

(ii) Lists of the names and addresses of the members of Council and its Committees (one copy of the list in the appropriate file and another in a central records register).

(iii) Lists of the names and addresses of the Officers and members of Branch Committees.

(iv) A list of the Academy's representatives (if any) on other bodies - including the names of members of the Academy appointed to represent it at
meetings of other Societies in East Africa and overseas.

(5) **Annual Conference**

Depending on the decisions taken by the Council on the planning of future conferences the Executive Officer should be responsible (as Secretary of the Programme Committee and by liaison with the appropriate Branch Committee) for co-ordinating plans for, and circulating to all concerned the necessary information about, the Conference. His responsibilities in this context could well include:

(i) the assembly of the essential information about the local arrangements for the meeting and about the scientific programme and the preparation of informative circulars (for general distribution) based on that information

(ii) the making (and confirmation) of arrangements for the accommodation of visiting members (though this might be more appropriately left to the responsible Branch Committee)

(iii) the maintenance of a register of all those who announce their intention to attend the Conference and the issue to them, at the right time, of the necessary documents

(iv) arrangements for publicity for the Conference, except in the area of the Branch where the meeting is to be held

(v) distribution of the proceedings of the Conference, when published, to members and others entitled to receive them.
(6) **Office Administration**

Depending on the authority delegated to him by the Council the Executive Officer should be responsible for:-

(i) The payment of staff wages and the general conditions of service within the office.

(ii) The maintenance and servicing of office furniture and equipment and the preparation of an inventory of such equipment (each item should be numbered and listed against this number in the inventory, together with the date of purchase).

(iii) The day to day accounts of the office. The Executive Officer should keep:

(a) A receipt and payments cash-book in which every sum of money received (or paid out) should be listed, together with an indication of source (or reason for expenditure) and a code number. Each voucher for payments made and a duplicate of each receipt issued for money received (which should bear a number corresponding to that entered in the cash-book) should be retained and filed in date order (in separate files) for later use for purposes of audit. All money received should be banked regularly and each receipt issued should state the date, name, amount and the exact purpose for which the money was received.

(b) A ledger in which all payments received are listed under appropriate columns (e.g. membership subscriptions, sale of publications) on one side - and all payments made on the other (under such headings as wages, stationery, postage and telephone, travelling expenses etc. etc.). Each entry in the ledger should be dated at the time the transaction
is recorded and should give (as a cross-reference) the corresponding code-number taken from the cash-book. The entries in the ledger should be totalled once a month and the balance cross-checked with the cash-book statement for the corresponding period. A monthly statement should then be prepared for submission to the Treasurer.

(c) A separate record (giving date, place and name of originator) of all trunk calls and/or telegrams made through the office.

(d) A separate post book in which the cost of stamps purchased is balanced against the record (made daily) of mail despatched.

(e) A separate account of the use of any petty-cash 'float' authorized by the Treasurer for incidental expenses.

(7) Miscellaneous Duties

The Executive Officer will be expected:-

(i) To implement all standing instructions required of him by the Constitution, Bye-Laws and Minutes of Council (e.g. maintenance of a register of Institutional Members, circulation of minutes and papers of Council meetings to the Trustees of the Academy).

(ii) To maintain in good order, and catalogue, the Academy's library of periodicals, reference books, reports, proceedings etc.

(iii) To accept responsibility, as appropriate, for the sale of the Academy's proceedings and for the necessary accounting.

(iv) To maintain liaison, by correspondence and
travel, with the Branches.

(v) To act on behalf of the Secretary and other Officers in dealing with enquiries generally and in maintaining liaison with the Press and other information media.

(vi) To prepare, for circulation to all members, a regular news-letter giving full information about the activities and membership of the Academy.

(vii) To draft an Annual Report on the Academy's activities for submission, after consideration by the Council, to the Annual General Meeting.

V. EXECUTIVE OFFICER: OFFICE ADMINISTRATION

(1) Introduction

Administration of any sort is conducted largely by means of personal contact, over the telephone, or by the communication of information and instructions on paper - and the greatest of these three (much though it may be regretted) is 'paper'. It is, therefore, essential to the efficient administration of any office that a simple system for the management (storage and retrieval) of papers be instituted and maintained.

(2) General Procedures

(i) Each letter (or document) originating from the office should be correctly dated and bear the appropriate file reference (see below).

(ii) One copy of each letter should be put on the appropriate file and a second copy should be put into a 'Review' file which should remain on the Executive Officer's desk; the Executive Officer should use this file as a constant reminder of outstanding action: once replies to letters are received (and action on them is completed) then the copy of the letter concerned can be
removed from the 'Review' file and scrapped. Additional copies of letters may, of course, have to be made at the time of typing if it is necessary to inform other Officers on the matter in question.

(iii) Each letter (or other document) put on each file should be numbered consecutively so that reference can be made when necessary to particular entries in the files. If an incoming or outgoing letter deals with more than one matter copies should be made, if possible, for each of the relevant files. Failing this a note should be put on those files giving a cross-reference to the letter or document in question.

(iv) If business is undertaken by discussion (either in person or on the telephone) a brief note of the conversation and of any decisions taken should be made at the time, dated, and put on the appropriate file (with a copy for the 'Review' file).

(v) Filing should be done at the end of each day and not allowed to accumulate.

(3) **Filing System**

The numerical system is simple, flexible and workable and it is recommended that it be introduced:

(i) All files dealing with a broad and related group of subjects (e.g. Annual General Meeting or Council or Committees) are given an agreed number prefix.

(ii) Sub-divisions (i.e. files dealing in detail with subjects within the broad division) are then numbered consecutively - an oblique stroke being placed between the initial prefix and the second number; further sub-divisions can be easily introduced in the same way (i.e. by adding an oblique stroke after the
second number and introducing a further series of consecutive numbers).

(iii) This system can usefully be combined with a broad alphabetical system (by subject) by listing most of the subjects which the office is likely to deal with in alphabetical order before allotting the agreed number prefixes to those broad subject-categories. If this is done then all files will appear in the filing cabinet in a basic alphabetical order as well as in the agreed numerical order. It will be necessary, however, in deciding on the numbering of main file groups, to leave fairly wide gaps in the numerical series so that new numbered categories can be introduced as the work of the office expands.

(iv) It will be necessary to keep a master list (in numerical order) of all files so that reference may be made quickly and easily to all parts of the system. Such a list should show the main file groups and all sub-files within each group and could most easily be kept (to allow for additions) in the form of a card index.

(v) A possible grouping (and numbering) of the Academy's files might be:

1 Accounts
5 Annual Conference
10 Annual General Meeting
20 Branches
30 Committees
40 Council
50 East African Common Services Organization
60 Finance
70 Governments, Relations with
80 Membership
90 Office Administration
100 Officers
110 Overseas Relations
120 Press, Publicity etc.
130 Publications
140 Research Projects
150 Scientific Societies

(vi) Within this series, to take one example, the sub-divisions might be as follows:

30 Committees/

1 Executive Committee/

1 Agenda
2 Minutes
3 Correspondence

2 Membership Committee

3 Scientific Policy Committee

Then the file dealing with correspondence arising from the work of the Executive Committee would be, for example: 30/1/3.

(4) Membership Records

The following system would be both simple and adequate:

(i) Keep a card (see below for design) on which the necessary information about each member is entered.

(ii) Keep these cards in alphabetical order (in a card index cabinet).

(iii) The cards should be of four distinctive colours (one for each Branch) so that, when required, all cards of one colour can be extracted to give the membership of each Branch in the correct alphabetical order.
(iv) It is important that the cards should be kept up to date by entering all amendments (changes of address, category of membership, etc. etc.) as they are received.

(v) Possible design of card (ruled lines to be printed on the cards when they are ordered):-

**FRONT**

<table>
<thead>
<tr>
<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
</tr>
<tr>
<td>Branch</td>
</tr>
<tr>
<td>Membership category and date of election:</td>
</tr>
<tr>
<td>Any office held:</td>
</tr>
</tbody>
</table>

**REVERSE**

<table>
<thead>
<tr>
<th>Subscription due (amount)</th>
<th>Year</th>
<th>Subscription received (amount)</th>
<th>Date subscr. received</th>
<th>Date subscr. reminder sent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1964-65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1965-66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(5) **Addressing Procedures**

(1) Considerable saving of time and effort will accrue from the adoption of a mechanical addressing system and it is hoped that the Academy will, as
recommended, (see Appendix B) be able to acquire a manually operated addressing machine.

(ii) If so, then addressograph stencils should be cut (and kept in alphabetical order) for:-
(a) all members - for the despatch of such things as information about the Annual Conference, News-Letter, printed Proceedings.
(b) all members of the Council - to facilitate circulation of agenda and papers for meetings; this set of stencils should, of course, be kept separate.
(c) members of each of the Council's standing committees; sets of the stencils to be kept separate from the other sets proposed above.

(iii) Again, it is of the utmost practical importance that the sets of addressograph stencils proposed above be kept up to date by incorporating all changes of address as they are intimated.

H. CONCLUSIONS AND RECOMMENDATIONS

I. ACHIEVEMENTS OF THE ACADEMY

The East African Academy was born of the enthusiasm, and has been nourished by the devotion, of a small group of East African scientists. Its achievements, during its comparatively brief life-span so far, have included the promulgation of an agreed Constitution, the creation of a Governing Council and of an inter-territorial Branch organization, the staging of Annual Symposia (the proceedings of the first of which have now been published), the initiation of Branch lecture programmes, and the successful development of mutually rewarding relationships with a number of Academies and other scientific institutions.
II. COMMENTARY ON THE ACADEMY'S AIMS

The Academy has, laudably, set itself very broad aims - the encouragement of research, the strengthening of the scientific community, and the dissemination of science to the public. Accomplishment of any or all of these objectives would seem to require that the Academy commands, both through its own membership and through those who serve it in other ways, very wide scientific and public support; for in the growth of voluntary societies, as in other situations, a certain 'critical size' must be reached if a self-sustaining reaction is to be achieved. Given this support, and given the Academy's own understanding that it will achieve much more in a 'stimulating' and co-ordinating, rather than an executive, role it is then necessary to consider what the Academy's future pattern of activities should be.

III. RESERVATIONS CONCERNING FUTURE ACTIVITIES

But two points must first be emphasised: -

(i) A number of suggestions have been made earlier in this paper of ways in which the Academy might implement certain of its objectives. These suggestions, it must be made clear, are intended only to provide a basis for discussion of possible future activity and are not submitted as recommendations for immediate action. Indeed, it would be unrealistic to suppose that the Academy either ought or could, at its present stage of development, undertake major additional responsibilities.

(ii) The suggestions for future activities and the many other comments made, directly or indirectly, on the Academy's present Constitution and organization are offered with some diffidence - and after a necessarily somewhat
limited and superficial exploration of the problems and of the circumstances in which solutions to those problems must be developed. It is hoped, nevertheless, that the opinions which have been expressed will make some relevant and constructive contribution to the Academy's future.

IV. SUMMARY OF PROPOSALS FOR THE ACADEMY'S FUTURE PATTERN

It is suggested, subject to these reservations:—

(i) that the Academy should concentrate its energies during the next year or two on measures designed to strengthen its membership, internal structure and administrative machinery (see § below)

(ii) that, with its foundations thus secured, the Academy should then proceed to develop programmes of activity aimed at creating a more general understanding of science throughout East Africa and at consolidating its position as the central, co-ordinating Learned Society in East Africa (see § below).

V. RE-CONSIDERATION OF INTERNAL STRUCTURE AND ADMINISTRATIVE MACHINERY

The primary objectives would appear to be:

(i) The assurance of an income (supplemented where appropriate by material help of other kinds) sufficient to support the establishment of a permanent office by the appointment of a full-time Executive Officer (supported by a competent secretary/stenographer) and the provision of suitable office accommodation (together with the necessary furniture and equipment).

(ii) The consideration of, and taking decisions on, the constitutional and other proposals outlined above (e.g. reconsideration of the aims of the annual symposium
limited and superficial exploration of the problems and of the circumstances in which solutions to those problems must be developed. It is hoped, nevertheless, that the opinions which have been expressed will make some relevant and constructive contribution to the Academy's future.

IV. SUMMARY OF PROPOSALS FOR THE ACADEMY'S FUTURE PATTERN

It is suggested, subject to these reservations:

(i) that the Academy should concentrate its energies during the next year or two on measures designed to strengthen its membership, internal structure and administrative machinery (see § below)

(ii) that, with its foundations thus secured, the Academy should then proceed to develop programmes of activity aimed at creating a more general understanding of science throughout East Africa and at consolidating its position as the central, co-ordinating Learned Society in East Africa (see § below).

V. RE-CONSIDERATION OF INTERNAL STRUCTURE AND ADMINISTRATIVE MACHINERY

The primary objectives would appear to be:

(i) The assurance of an income (supplemented where appropriate by material help of other kinds) sufficient to support the establishment of a permanent office by the appointment of a full-time Executive Officer (supported by a competent secretary/stenographer) and the provision of suitable office accommodation (together with the necessary furniture and equipment).

(ii) The consideration of, and taking decisions on, the constitutional and other proposals outlined above (e.g. reconsideration of the aims of the annual symposium
and the creation of a Programme Committee, the strengthening of the Council and Executive Committee.

(iii) The clarification of the role of Branches vis-à-vis that of the Council and the central office and the introduction of measures designed to encourage full and continuing participation by the Branches in Academy programmes and affairs. At this stage every effort will have to be made to attract new members and to engage more closely the interest and support of existing members - for without an increase in membership it will be difficult to maintain viable Branch Committees and, consequently, for them to sustain successful local programmes.

VI. CONSOLIDATION OF THE ACADEMY'S STANDING AS A LEARNED SOCIETY AND SUGGESTIONS OF WAYS IN WHICH THE ACADEMY MIGHT SEEK THE HELP OF THE EAST AFRICAN COMMON SERVICES ORGANIZATION

(i) The East African Common Services Organization has officially recognised the East African Academy as an indigenous East African Learned Body (Official Gazette, January 22, 1964) and it is confidently to be hoped that the Governments of Kenya, Uganda and Tanzania will, as the next step, themselves grant the Academy formal recognition and thus, by their acceptance of its essential role in East Africa, greatly strengthen its standing in the community and its ability to achieve its purposes.

Formal recognition at this formative stage in the Academy's history will clearly be invaluable but if the Academy is to achieve the necessary "take-off" material help is also essential. It will not perhaps be inappropriate, therefore, to suggest - in conclusion - ways in which the East African Common Services Organization and the Governments of Uganda, Kenya and Tanzania might provide the necessary support:-
(a) a direct annual grant of money, the expenditure of which would be left to the Academy's discretion, would be invaluable to 'prime the pump' (a first charge on any such grant would be the creation – as outlined above – of an efficient Secretariat.

(b) short of this, the provision by secondment, or in some other way, of a suitably qualified Executive Officer for full-time service with the Academy would be of inestimable value.

(c) the Academy's ability to develop its Annual Meetings as major public and scientific occasions would be considerably strengthened by decisions designed to make it more practicable for scientists and other professional workers (and especially those invited to contribute papers at such Meetings) employed by E.A.C.S.O. and the three Governments to participate in them: it would, therefore, be extremely helpful if

(i) either all or some part of the expenses incurred by such workers in attending the Academy's Annual Meetings could be officially reimbursed by the Research Institute or Department concerned

(ii) the time spent in attendance at Annual Meetings could be regarded as time spent on ‘official duty’ and not as a charge on the individual’s annual leave entitlement.

VII. RECOMMENDED PROGRAMME OF ACTIVITIES

It is recommended, at the level of programme activities, that the Academy should concentrate meanwhile on creating a more general understanding of science throughout East Africa and, in particular, on:

(a) making its Annual Symposia the primary forum for
meetings of scientists and laymen in East Africa

(b) maintaining and developing its Branch lecture-programs throughout the year

(c) developing the services to Branches (and members generally) which the appointment of an Executive Officer will make possible (e.g. introduction of a News Letter, building up of an Academy reference library etc.)

(d) developing its relations with scientific institutions overseas: while it is not felt desirable that the Academy should at this stage get too deeply involved in international scientific projects which may well overstrain its, at present, limited secretarial, scientific and human resources, it is hoped that it will be able to continue to contribute usefully to the International Biological Programme (for which it is acting as the adhering body - for East Africa - to the International Council of Scientific Unions). If the Academy's contribution to the International Biological Programme is to be successfully developed without prejudice to the many other current demands on its energies and resources it will be necessary for the Academy to assure itself of appropriately qualified staff and it is recommended that it consider making an application to UNESCO (through the Regional Technical Assistance Programme) for the appointment, over a period of, say, three years, of a documentalist to undertake the necessary work.

The Academy could then, at the appropriate time, consider what steps, if any, it wished to take to develop some of the ideas proposed above - in relation to both the scientific community and the public at large. A
desirable first step would be for the Academy, through its President and Branch Chairmen, to convene informal and separate meetings (after careful preliminary preparations) of representatives of all other scientific and learned societies, and of the appropriate educational, civic, and professional bodies. At each of these meetings the Officers of the Academy and its Branches could, after saying something of the Academy's aims, indicate that it hoped to be of service to the East African community generally, and invite discussion of common problems and of the ways in which the Academy might contribute to such an aim. Such meetings would, it is felt, not only help to strengthen the Academy's public 'image' but be genuinely informative and productive for all those present and might well provide an agreed starting point for new activities.

VIII. PROPOSED ACTION BY UNESCO IN SUPPORT OF THE EAST AFRICAN ACADEMY

It is recommended that UNESCO should consider, through the Regional Technical Assistance Programmes or in other appropriate ways:

(i) Making a grant to the Academy of £2,000 to enable it to purchase essential office furniture and equipment (see p.3, 52/53 and Appendix 2).

(ii) Providing funds to enable the Academy to undertake exchanges of delegates with other Academies of Science and Science Associations, especially in Africa (see page 22).

(iii) Financing the appointment, for a period of two years, of a suitably qualified Executive Officer charged with setting up, on the Academy's behalf, a permanent Secretariat and with training a successor appointed by the Academy (see p.51/52).
(iv) What help might be made available to the Academy through the "Centre for Science and Technology" to be established by UNESCO in Nairobi (see page 52).

(v) Financing the temporary appointment of a documentalist charged with supporting the Academy's current and projected contribution to the International Biological Programme (see page 71).

IX. SUMMARY

The work of the East African Academy, to sum up, has attracted much support and goodwill - as well as giving rise to an increasing recognition of the vital role which the Academy can play in the general development of East Africa both now and in the future. Continuing growth and development in the future will present its Officers, members and supporters with great challenges and many demands on their time and energies but, if past achievement is any guide, they will prove more than equal to such demands. It is sincerely hoped that this summary review of the Academy's functions, organization and administration will make some small but useful contribution to that end.

J.M. ROBERTSON
18 February 1965

NOTE

The complete report includes Appendices 1-6 and a number of printed documents (Annexes 1-10) presented for the information and guidance of the East African Academy itself; copies of the report (and appendices), except those destined for the Academy itself, may therefore be circulated without the annexes.
I. APPENDICES

APPENDIX 1: Sources of Advice

The East African Common Services Organization
Mr. Dunstan Omari, Secretary-General, E.A.C.S.O.

The Government of Kenya
Mr. A.P. Achieng, Permanent Secretary, Ministry for Natural Resources.

The East African Academy
The President: Dr. W.K. Chagula, The Registrar, University College, Dar es Salaam.

The Hon. Treasurer: Dr. M. Hyder, Department of Zoology, University College, Nairobi.

The Hon. Secretary: Dr. D. Odhiambo, Department of Chemistry, University College, Nairobi.

Officers of the Kenya Branch
Chairman Dr. P.E. Glover
Secretary Mr. F.P. Ojany, Department of Geography, University College, Nairobi.
Treasurer Mr. R.W. Roach, Veterinary Research Laboratory, Kabete.

Officers of the Uganda Branch
Secretary Mr. D.P. Ghai, University College, Makerere.
Treasurer Dr. A. Dandy, University College, Makerere.

Officers of the Tanganyika Branch
Secretary Mr. Y.F. Ghai, University College, Dar es Salaam.
Member of Committee Professor T.O. Ranger, University College, Dar es Salaam.

Others
Mr. A.L. Adu Representative, U.N. Technical Assistance Board and Special Fund, Dar es Salaam.
Prof. L.C. Beadle Department of Zoology, University College, Makerere.
Dr. B.T.G. Chidzero Representative, U.N. Technical Assistance Board and Special Fund, Nairobi.
Mr. R.A. Frost Representative of the British Council, Kenya.
Prof. Royston Jones Department of Civil Engineering, University College, Nairobi (member of the Kenya Branch).
Prof. D.S. Kettle  
Department of Zoology, University College, Nairobi. (Immediate Past-Chairman of the Kenya Branch.

Mr. P. Marsh  
Representative of the British Council, Uganda.

Mr. Mate  
Head of UNESCO Bureau of Missions, Dar es Salaam.

Mr. R. Millburn  
University College, Makerere.

Mr. R.B. Ogendo  
Department of Geography, University College, Nairobi. (Past Secretary of the Kenya Branch).

Prof. S.H. Ominde  
Department of Geography, University College, Nairobi.

Dr. D.G. Osborne  
Department of Physics, University College, Dar es Salaam.

Mr. R. Scholes  
Officer in Charge, Nairobi Science Teaching Centre.
APPENDIX 2: Budget proposed for the supply by
UNESCO to the East African Academy of
essential office furniture and
equipment

Approximate price in
U.S. dollars

I. FURNITURE

(i) Two executive-type desks (one for the use of the Executive Officer and one for the use of Honorary Officers on Academy business 180

(ii) Two executive-type chairs 60

(iii) Table for use during meetings of the Academy's Committees, plus chairs (up to 18 persons) 300

(iv) Two cupboards for storage of documents, stationery, minute-books, etc. 150

(v) Two bookcases for storage and display of books, periodicals, etc. 150

(vi) One long working table (for collating papers, etc.) and one small table for general use on clerical tasks 60

II. EQUIPMENT

(i) One lateral filing cabinet (with dust cover), plus 300 folders and pockets 210

(ii) One Gestetner duplicating machine (two speed automatic) 500

(iii) One Roneo hand-operated addressing machine, plus 500 stencil cards, and trays to contain them 200

(iv) Miscellaneous items: filing trays, scales, stapling machine, punch for filing papers, scissors, waste-paper baskets, card-index cabinets plus record cards, blotting-pads for desk use, ash-trays, etc. 140

III. RESERVE FOR CONTINGENCIES 50

Total cost estimated at: $2000

*Note: The only furniture and equipment currently owned by the East African Academy is as follows: 1 Typewriter, 1 Typist's desk and chair, 1 four-drawer (vertical) filing cabinet.
APPENDIX 3: Recommended list of Directories, Year Books, etc.

The World of Learning
Europa Publications Ltd.,
18 Bedford Square,
annually £7

Commonwealth Universities Yearbook
The Association of Commonwealth Universities,
36 Gordon Square,
annually £5.5s.

International Handbook of Universities and other Institutions of Higher Education
International Association of Universities,
6 rue Franklin,
Paris XVI eme.
about every 3-4 years, third edition expected 1965
(£2 - £3?)

Scientific and Learned Societies of Great Britain
George Allen & Unwin Ltd.,
Ruskin House,
Museum Street,
every 3-4 years
£2.5s. (last edition 1964)

Scientific and Learned Societies of the U.S.A. and Canada
National Academy of Sciences - National Research Council,
Washington 25, D.C.,
U.S.A.
ocasionally,
no price (last edition 1955)

Year Book of International Organizations
Union des Associations Internationales,
Palais d'egmont,
Brussels 1,
Belgium.
£4.5s. - published occasionally - last edition

The Year Book of the International Council of Scientific Unions
International Council of Scientific Unions,
2 via Sebenico,
Rome,
Italy.
annual - price not known

Year Books are published by some Academies and can be very useful.

*Note* The office of the British Council in Nairobi has very generously indicated that it expects to be able to make a gift of the reference works listed above to the East African Academy and a copy of this schedule (Appendix 3) has, therefore, been deposited with the appropriate officer of the Council for consideration and action.
APPENDIX 4

ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE
(current addresses are given where known)

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
1515 Massachusetts Avenue, N.W., Washington, D.C.

ARGENTINE ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
ASOCIACION URUGUAYA PARA EL PROGRESO DE LAS CIENCIAS

ASSOCIACAO PORTUGUESA PARA O PROGRESSO DAS CIENCIAS

ASSOCIATION FRANCAISE POUR L'AVANCEMENT DES SCIENCES
28 Rue Serpente, Paris, 6o.

ASOCIACION ESPANOLA PARA EL PROGRESO DE LAS CIENCIAS
Valverde 22, Madrid.

ASSOCIATION CANADIENNE-FRANCAISE POUR L'AVANCEMENT DES SCIENCES
Secretariat General, C.P. 6128, Montreal 26.

AUSTRALIAN AND NEW ZEALAND ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
Science House, 157 Gloucester Street, Sydney.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

BURMA SCIENCE ASSOCIATION

CEYLON ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
The General Secretary, University of Ceylon, Colombo 3.

INDIAN SCIENCE CONGRESS ASSOCIATION
64 Dilkhusa Street, Calcutta 17.

ASSOCIATION FOR ADVANCEMENT OF SCIENCE IN ISRAEL

PAKISTAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

PHILIPPINE ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
Institute of Science and Technology, Herrom Street, Manila.

SOCIEDADE BRASILEIRA PARA O PROGRESSO DAS CIENCIAS
Caixa Postal 2926, Sao Paulo, Brazil.

SOCIETÀ ITALIANA PER IL PROGRESSO DELLE SCIENZE

SOCIETE HELVETIQUE DES SCIENCES NATURELLES
2 Bühlplatz, Berne, Switzerland.

SOUTH AFRICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
Kelvin House, Marshall and Hollard Streets, Johannesburg.

ASSOCIATION VENEZOLANA PARA EL AVANCE DE LA CIENCIA
Institute de Investigacion Cientifica, Este 10, No.248, Caracas, Venezuela.
APPENDIX 5: Science Fairs in the United Kingdom

Basically a Science Fair is an exhibition of science work in schools, supplemented by industrial, university and technical colleges and sometimes other exhibits. It is not the aim to reflect standard experiments carried out on the normal curriculum of science teaching. It is rather the aim to present work which pupils have done themselves because they wanted to do it.

In many cases the exhibit is the result of work on a project undertaken by a school science society. In some cases, with modern schools, the project is worked up in class time - but this is no objection. In some Grammar Schools, where examination work interferes with extra-curricular activities, an exhibit consists only of a demonstration of a piece of apparatus and its uses. But one can never tell; at one time it was felt that it would be nice to have just one Fair without a Van de Graaff generator - and then a school came up with one they had made themselves from a football and assorted pieces of domestic hardware which was a grand project.

Selecting outstanding projects from a number of Fairs, to show the sort of thing that can be done, one might choose:-

(a) Science in an old Austin 7 where an ancient perambulator had been taken to pieces, lovingly restored and rebuilt and then the science of various parts examined - the optics of the headlights, the ignition system, the geometry of the steering gear, the facts of manifold pressures, the working of gear boxes and differentials and so on - by a modern school group consisting of girls and boys.

(b) Aerial photography, where a model aeroplane project had developed into radio control made up from surplus parts and then a radio-controlled camera included to provide overlapping photographic surveys of the area round the school from 600 feet - again by a modern school group.

(c) A study of the effect of stiletto heels on various floor materials.

(d) A study of various textiles as affected by washing, boiling, dyeing, scorching, burning etc., well observed and recorded by a girls' High School.

(e) A social survey of a new residential suburb of a large city, conducted and recorded by a mixed modern school.

(f) Many very fine ecological surveys, geological surveys, air pollution investigations, archaeological projects and microbiological and genetics projects.

Generally, the ideal project is that on which the largest possible group of pupils of the greatest possible range of age and interest has worked. It has often been found possible in a scientific society for pupils of three different years to work on different aspects of one project; and it has often been found possible to get those with mainly historical or artistic interests to work on research for a project or the best presentation of the results.
Projects are generally worked up over not less than two terms. In this case, if the broad outlines can be decided by the beginning of the summer terms, two terms will be available for work; but it does mean that it will be necessary to take into account school leavers who may be able to work on the start of a project but not see it through to the end.

At the Fair, whenever possible, projects are demonstrated and explained by the pupils who have actually worked on them, organized in relays so that they will all get a chance. School parties are organized to visit the Fair, both from schools which are offering exhibits and from other schools.

It is clearly of the greatest benefit to the organizers if they can get, as early as possible, an indication of the response likely to be made by schools and of the sort of exhibit likely to be offered, the probable size and the services required for it.

Attached to this explanatory paper is a form on which this information can be given. It would be greatly appreciated if this form could be completed and returned as soon as possible; it may be necessary to suggest adjustments to avoid clashes between proposals.

---

### SCIENCE FAIR

**NAME AND ADDRESS OF SCHOOL**

Name of teacher responsible to whom correspondence can be addressed.

Description of proposed exhibit(s) (1) subject, treatment, etc.

(2)

(3)

Length of bench or table (1) space required (2) (3)

Is a demonstration display (1) Yes/No backing required (2) Yes/No (3) Yes/No

Services required, running water and drains, gas, low voltage electricity, mains electricity and maximum continuous current (1) (2) (3)

Value of exhibits for insurance purposes (1) £ (2) £ (3) £

Any special requirements (e.g. low level of lighting, peg boards etc.) (1) (2) (3)

Will you require transport for the exhibits to and from the Fair Yes/No

Any comments or queries?
APPENDIX 6: Notes on the preparation of Committee minutes

1. General

While the minutes of the Council and its Committees should be prepared in as concise a form as is consistent with clarity it should be borne in mind that the work of Committees forms a focus of the Academy's activities and all minute books should accordingly contain a record of current affairs sufficient for the guidance of future Officers and staff who will not have knowledge of the contemporary background. The ideal to be aimed at should be a succinct account of the business transacted at each meeting, setting forth in clear language all decisions reached and recommendations made, so that the necessary further action can be taken.

2. Detail of minuting

All minutes should commence in standard form, for example "At a meeting of the Council held on 21 June 1964", followed by a list of the names of those present.

Letters of apology for absence are reported by the Chairman at the meeting but are not (unless it is the wish of the Committee) recorded in the minutes. The first item should be "The minutes of the meeting held on (date) were confirmed" (or "were confirmed subject to amendment", as the case may be). Business arising from those or any previous minutes is next dealt with in proper date order and each matter thus considered should be minuted with a standard prefix, e.g. "with reference to minute 4 of 21 June 1964, etc."

Matters before a committee for the first time are next taken and should be minuted by a brief descriptive preamble setting forth the subject and followed by one or more resolutions of the action to be taken or recommended to the Council. Discussions should not, generally speaking, be reported in detail though, in exceptional cases, a brief record may be made of the outline of any discussion where such is deemed desirable. Usually, however, some such phrase as "after full discussion" will suffice.

Resolutions passed by committees whose action requires confirmation by the Council should start on a fresh line

"Resolved - To recommend to Council that etc."

When several recommendations on the same matter are submitted, the form is

"Resolved - That the following recommendations be made to Council:
(a) That ...
(b) That ...
(c) That ... etc."

Alternative forms of resolution may be used when necessary such as

"Resolved - That Council be informed that it was the opinion of the Committee that etc."
Resolutions of self-governing committees should be framed in executive form, for example

"Resolved - That Dr. A.B. be invited to serve on the Committee etc."

Minor decisions not requiring confirmation by Council or formal resolutions should be minuted with the usual preamble followed by a fresh sentence commencing "It was agreed that etc."

When matters are considered which cannot readily be summarized, such as those based on papers already circulated to the Committee, such papers may be added to the minutes as 'Appendix A', 'Appendix B' etc., and a reference to each appendix inserted in the body of the minutes. The number of appendices should, however, be kept within reasonable limits. Matters formally reported to a committee should be recorded in the minutes as "Reported that etc.". If the report in question is one of some permanent interest it may also be added as an appendix.

When entering names of persons in the minutes, it is most important to state initials and not just 'Professor Jones' or 'Dr. Brown', so as to avoid difficulties of identification which will arise after a lapse of years. This point should be especially noted as it is frequently disregarded. The words 'Council', 'Committee', 'Society', etc., should be used with a singular verb.

Each individual minute should be numbered (i.e. 1, 2, 3 ... and not 1, 2, 2(a), 2(b), 3, etc., or 1, 1.1, 1.2, 2, etc.) and should have an underlined heading to indicate its contents, e.g. Appointment of Delegates, Publication of Proceedings - or whatever the subject may be.

3. Minutes of matters dealt with by correspondence

Whenever the opinion of a committee is obtained by correspondence, a record thereof should be entered in the appropriate minute book. Examples of the correct form are as follows:

"Editorial Committee

The opinion of the Committee was obtained by correspondence in July 1964 when it was agreed that etc."

4. Reporting to Council

As soon as it is known that any committee will have a report or recommendation for the Council the Executive Officer should be notified forthwith by sending him the appropriate papers (e.g. minutes of the committees' meetings, copies of relevant correspondence and/or of a letter from the Chairman or Secretary of the committee indicating what recommendations it is wished to make).