

NSFAR-71/72



ANNUAL REPORT

1971-1972

NATIONAL SCIENCE COUNCIL OF SRI LANKA

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NATIONAL SCIENCE COUNCIL OF SRI LANKA

ANNUAL REPORT
of the
NATIONAL SCIENCE COUNCIL OF SRI LANKA
for the
FINANCIAL YEAR, 1971/72

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National Science Council of Sri Lanka (Ceylon),
47/5, Maitland Place,
Colombo 7.

14th November, 1973.

The Minister of Industries & Scientific Affairs,
The Ministry of Industries & Scientific Affairs,
48, Sri Jinaratana Road,
Colombo 2.

Dear Sir,

**Annual Report of the National Science Council of Sri Lanka (Ceylon)
for the period 30th September 1971 to 31st December 1972**

In terms of Section 28 of the National Science Council of Ceylon Act No. 9 of 1968, I have the honour to submit the Annual Report of the National Science Council of Sri Lanka (Ceylon) for 1971/72 together with

- (a) A copy of audited Income & Expenditure Account.
- (b) A copy of the audited Balance Sheet.
- (c) Auditor General's Report.
- (d) My comments on the Report of the Auditor-General.

Yours faithfully,

O. W. Jayaratne
Chairman,
National Science Council.

ANNUAL REPORT OF THE NATIONAL SCIENCE COUNCIL OF SRI LANKA
COVERING THE PERIOD 1st OCTOBER 1971 TO 31st DECEMBER 1972

I MEMBERSHIP OF THE NATIONAL SCIENCE COUNCIL OF SRI LANKA

1 (A) Membership of the National Science Council

(Till April 18th 1972)

Chairman

MR. A. N. S. KULASINGHE

(Appointed in terms of Section 7 (1) of the National Science Council Act No. 9 of 1968)

Vice-Chairman

PROF. B. A. ABEYWICKREMA

(Elected in terms of Section 7 (2) of the National Science Council Act No. 9 of 1968)

Members

PROF. V. APPAPILLAI

PROF. H. CRUSZ

PROF. C. DAHANAYAKE

DR. L. H. FERNANDO

MR. L. J. D. FERNANDO

MR. J. V. FONSEKA (resigned 21-2-1972)

DR. CHARLES ST. GEORGE

PROF. H. A. DE S. GUNASEKERA

DR. R. P. JAYAWARDENA

DR. J. W. L. PEIRIS

PROF. E. O. E. PEREIRA

PROF. P. P. G. L. SIRIWARDENA (resigned 8-1-1972)

MR. M. SIVANATHAN

MR. A. E. K. TISSEVERASINGHE

DR. R. A. H. WEERAKOON

Secretary-General

DR. G. C. N. JAYASURIYA

I (B) Membership of the National Science Council
(Appointed with effect from 2nd May 1972)

Chairman

DR. O. W. JAYARATNE

(Appointed in terms of Section 7 (1) of the National Science Council Act No. 9 of 1968)

Vice-Chairman

MR. D. B. PATTIARACHCHI

(Elected in terms of Section 7 (2) of the National Science Council Act No. 9 of 1968)

Members

PROF. B. A. ABEYWICKREMA
DR. R. C. DE SILVA
DR. M. A. V. DEVANATHAN
DR. L. H. FERNANDO
DR. S. T. G. FERNANDO (resigned, October 1972)
DR. L. P. D. GUNAWARDENA
MR. S. F. LAURENTIUS
MR. A. S. MENDIS
MR. T. W. MENDIS
DR. W. R. N. NATHANAEI
DR. C. R. PANABOKKE
DR. J. W. L. PEIRIS
DR. O. S. PERIES
MR. M. M. PILLAI
MR. N. PUYAPALARASAN
MR. J. J. RAJANAYAGAM
MR. M. RANAWEERA
PROF. K. N. SENEVIRATNE
MR. A. E. K. TISSEVERASINGHE

Secretary-General

DR. G. C. N. JAYASURIYA

I (C) Composition of the National Science Council

Membership

The term of office of the members of the first Council expired in April 1971. Members of the first Council, present in Sri Lanka were re-appointed to the Council in April 1971. As the proposals submitted by the Minister of Industries and Scientific Affairs to the Cabinet, for the re-organization of the Council had been agreed to by the Cabinet, the members of this Council voluntarily resigned in April, 1972, leaving the Minister free to appoint a New Council in accordance with the Cabinet conclusion.

The New Council was appointed by the Minister on the 2nd May, 1972.

The following is a summary of the Cabinet conclusion.

The Cabinet agreed that the Council had not been able to carry out its major functions effectively, primarily due to the fact that the Council as a whole had no direct links with the Ministries, under which the major scientific activities in the country were carried out. The National Science Council had therefore tended to work in isolation.

To achieve greater co-ordination among the various sectors of research activity presently carried out in various departments, research institutes and Universities, it was suggested that the Ministries having related functions should be grouped in such a manner as to make possible the implementation of research and development activities, pertinent to that group of Ministries.

It was proposed that a Standing Research Committee should be set up for each group of Ministries. The Chairman of such a Committee, appointed in consultation with the particular Ministers concerned, will be appointed as a member of the National Science Council by the Minister of Industries and Scientific Affairs.

These members would thereby be in a position to transmit to the National Science Council, the scope and range of research activities in the different Ministries. This would assist the National Science Council to formulate an overall policy for scientific research.

The following were appointed to represent the Ministerial Groups :—

Group 1

Ministry of Agriculture and Lands
Ministry of Irrigation, Power and Highways (Irrigation Section)
DR. J. W. L. PEIRIS

Group 2

Ministry of Fisheries
MR. A. S. MENDIS

Group 3

Ministry of Foreign and Internal Trade
DR. S. T. G. FERNANDO

Group 4

Ministry of Plantation Industries
DR. L. H. FERNANDO

Group 5

Ministry of Irrigation, Power and Highways (Power & Highways Section)
Ministry of Communications
Ministry of Posts and Telecommunications
MR. T. W. MENDIS

Group 6

Ministry of Housing and Construction
MR. N. PUYAPALARASAN

Group 7

Ministry of Health
DR. L. P. D. GUNAWARDENA

Group 8

Ministry of Education
MR. M. RANAWEERA

Group 9

Ministry of Planning and Employment
MR. M. M. PILLAI

Group 10

Ministry of Finance
MR. J. J. RAJANAYAGAM

Group 11

Ministry of Industries and Scientific Affairs
No appointment of a Chairman of the Standing Research Committee was made. However, Dr. R. C. de Silva represents the Ministry.

Meetings

Nine Council Meetings were held during the period under review.

II PROFESSIONAL STAFF

Secretary-General :—

DR. G. C. N. JAYASURIYA—B.Sc. (CEY.) ; PH.D. (SHEFFIELD) ; F.R.I.C. ; F.I. CHEM. C.

Scientific Officers :—

DR. (MRS.) S. I. RODRIGO—B.Sc. (CEY.) ; PH.D. (NOTTINGHAM) ; A.R.I.C. ; F.I. CHEM. C.
MRS. M. B. DE SILVA—B.Sc. (CEY.)
DR. (MRS.) KAMALA DE SOYSA—B.Sc. (LOND.) ; PH.D. (LOND.) D.I.C. (resigned, 72-11-01)
MRS. S. P. PRELIS—B.Sc. (CEY.)

Staff Assistant :—

MR. J. C. P. JAYASINGHE—B.COM. (CEY.)

III. ACTIVITIES

The National Science Council of Ceylon, set up under Act No. 9 of 1968, has now been in existence for over four years. The main impediment to the progress and efficiency of the work of the Council for the first three years, was the lack of suitably qualified permanent staff. The first full-time Secretary-General, a Scientific Officer, and a Staff Assistant appointed in the first half of 1971, formed the nucleus of the Secretariat in 1971. In December 1971, one more Scientific Officer was appointed to the staff. In 1972, while two other Scientific Officers were appointed to the Secretariat, one resigned. Additional secretarial assistance was also obtained.

The organization of the Secretariat has enabled the Council to initiate many of the projects outlined in its proposed programme of activity for a three-year period. These projects are now well underway.

As a definite operational step in the realization of the objectives of the Council, two Panels, (i) on the Natural Resources of Sri Lanka, and (ii) on the Development of the Food Industry in Sri Lanka were set up. These Panels have continued to function and have submitted reports on some of the areas outlined for detailed study.

The Council policy has been to encourage and support research and post-graduate education in Science and Technology in Sri Lanka. Towards this end, a Scholarships Board and Research Grants Committee were appointed, to examine applications and award Research Grants, Research Fellowships and Studentships. It was encouraging to record that the number of applications this year greatly exceeded those of the two previous years. Awards are kept under constant review to ensure that fair progress in these projects is maintained.

Some of the major activities of the Council are summarised below.

Research Grants--1971/72 was the third year of the operation of this scheme. Of the seventy two applications received for Research Grants, thirty nine were recommended by the National Science Council to the Ministry of Industries and Scientific Affairs for approval. All the recommendations of the Council were approved by the Minister of Industries and Scientific Affairs (c.f. Appendix I).

Scholarships Board — 1971/72 was the second year of the operation of this scheme. During the year, one Research Fellowship and four Research Studentships were awarded.

Worthington Herbarium — On the recommendation of the National Science Council, and also some other individuals, steps were taken by the Ministry of Agriculture and Lands to retain the 'Worthington Herbarium' in Sri Lanka. This collection, together with some valuable books and manuscripts were bequeathed by the late Mr. T. B. Worthington to the Botanical Gardens at Kew. The Council was of the opinion, that this collection would be of more value to Ceylonese scientists, if housed and preserved in one of the Country's own scientific institutions.

Soviet Astronomic Expedition to Ceylon — The National Science Council and the National Committee for Radio Science, Aeronomy and Space Science (a committee established under the aegis of the National Science Council), considered a request from the U.S.S.R. Academy of Sciences to the Sri Lanka Government, that a Soviet Astronomic Team be allowed to work in Sri Lanka, for a period of two to three years. It was agreed that a collaborative project could be worked out. The Council considered that the best location for this project would be the Department of Physics, Vidyodaya Campus. The decision on this project was deferred till such time as the Campus would be released to the University authorities. The Campus has been released in October 1972, and the Council awaits a reply from the University authorities.

Magnetic Observatory Project at Vidyodaya University — Following on a recommendation made at the Commonwealth Consultative Space Research Committee meeting in Colombo, in February 1968, that a "Magnetic Observatory be set up in Colombo and Gan in addition to the Indian network for studies of the equatorial electrojet", the Government of India suggested that they were willing to consider a collaborative agreement between the Space Science and Technology Centre, Trivandrum (Thumba) of the Department of Atomic Energy, Government of India and the Vidyodaya University of Ceylon, for setting up a "ground based experiment for the study of equatorial electrojet". The two organizations, which would co-ordinate this project would be the Department of Atomic Energy (DAE) Government of India, and the National Science Council of Ceylon.

The Council having considered these proposals, sought the necessary authority from the Ministry of Industries and Scientific Affairs and the Ministry of Defence and External Affairs, to enter into an agreement with the Department of Atomic Energy on the project. A decision on this issue has been postponed, due to the fact that the Vidyodaya Campus was not available to the University authorities from April 1971 to September 1972. The Council awaits a reply from the University authorities.

World Plan of Action for Science and Technology — On a request from the Ministry of Planning, the Secretary-General prepared and forwarded a report on the state of Science in Ceylon, viewed in the context of the recommendations made in the World Plan of Action for Science and Technology. This document embodied proposals for the development of Science and Technology in the Second Development Decade.

National Scientific and Technical Documentation Centre — The Council considered the proposals submitted on the establishment of a National Scientific and Technical Documentation Centre, and recommended that the Centre should be a separate unit, administered by the National Science Council. They were of the opinion that it could form one of the chain of special libraries, whose work could be co-ordinated by the Ceylon National Library Services Board at a later date.

The Council has therefore decided to recommend to the Ministry of Industries and Scientific Affairs to go ahead with the plans to set up a National Scientific and Technical Documentation Centre as work could be started almost immediately.

A request for UNDP assistance for this project has been submitted by the Ministry of Industries and Scientific Affairs to the Ministry of Planning.

Foreign Exchange Exigencies Fund — The Council, having agreed in principle to a proposal to establish a Foreign Exchange Exigencies Fund, submitted by the CAAS took the necessary steps to set up such a Fund. Both the Import Control Department and the External Resources Department have agreed to this proposal in principle. The details will be worked out by the Controller of Imports and Exports, the Ministry of Industries and Scientific Affairs and the National Science Council, when the Foreign Exchange allocations for 1973 are being made.

Survey of Scientific and Technological Potential in Sri Lanka — As the first step in an attempt to obtain precise and up-to-date information on the country's scientific and technological potential (STP), the Council launched a survey of the Scientific and Technical manpower in the country. The first two questionnaires have already been sent out, and the completed returns are being processed. It is hoped that the Council will soon have a fully functioning STP Unit, so that the data obtained by this and other surveys will, once processed, be available for reference by any interested groups.

Journal of the National Science Council of Sri Lanka — The Council, in pursuance of its objectives, has decided to publish a scientific journal, the scope of which will extend to all branches of Science and Technology.

The Editorial Board was appointed in July 1972. The inaugural issue is scheduled to be published in mid 1973.

The National Science Council of Sri Lanka — Amendments to the Present Act — A Council sub-committee appointed to review the present Act, completed its sittings and has submitted a draft Bill for consideration by the Council.

National and International Membership —

International Membership — The Council has been appointed as the adhering member for Sri Lanka, to the following International Organizations.

- (a) Commonwealth Scientific Committee (CSC)
- (b) International Council of Scientific Unions (ICSU)
- (c) Union Radio-Scientifique Internationale — International Union of Radio Science (U.R.S.I.)

National Committees — The Council co-ordinated the working of the following National Committees.

- (a) The National Committee on Man and the Biosphere
- (b) The Ceylon National Committee for Radio Science, Aeronomy and Space Science.

Workshop on Early Evolution of Life — The National Science Council of Sri Lanka, together with the Ceylon National Commission for UNESCO, sponsored a workshop on "The Early Evolution of Life", under the auspices of UNESCO. This course was held at the University of Ceylon, Peradeniya from the 17th July-18th August 1972. Dr. T. Wickremanayake of the Department of Biochemistry, University of Ceylon, Peradeniya was the co-ordinator.

A grant of Rs. 5,000/- was voted by the Council towards the financing of the Workshop.

International Relations — During this period, closer liaison was established with other International Organizations, concerned with Science Policy. An interchange of ideas and comments on the subject of policy formulation was accomplished. Many of these organizations have kept the Council informed of their activities and an exchange programme for all reports and studies published by these organizations has been established.

Close collaboration with the Science Council of Canada and National Research Council of Canada, the Science Research Council of the United Kingdom, CSIRO — Australia, the Council of Scientific and Industrial Research, India, was established.

The Council is also in contact with the Council for Science and Technology, Japan ; the Applied Scientific Research Corporation of Thailand ; the Indonesian Institute of Sciences ; the National Science Council of Pakistan, the Science Council of Singapore and the National Research Council of Thailand among others.

IV. THE SECRETARIAT

The Secretariat — The Secretariat is now established and functioning satisfactorily. Many new projects have been initiated and others are being planned.

This year, the increase in the permanent staff of the Secretariat, both executive and other, has enabled the smoother functioning of the unit.

Staff — The staff at the end of the period under review, totalled nineteen.

The Secretary-General continued in office as did the Staff Assistant.

Of the four Scientific Officers appointed, three assumed duties within the period under review. However, the resignation of Dr. (Mrs.) Kamala de Soysa in November, brought the number in scientific staff down to three at the end of the year.

A Library Assistant and Telephone Operator/Receptionist were appointed and assumed duties within this period. Further additions to the staff included a clerk/typist and three labourers.

Office Building — The office of the Secretariat continued at 69, Horton Place.

The National Science Council building at Maitland Place is nearing completion, and it is hoped to move the Secretariat to the new premises early in 1973.

Council Library — A small library has been organised and is being maintained to service members of the Council, its various Committees and the Secretariat.

The scope of the holdings extend at present to General Science, Science Policy and the Environment. The acquisition policy adhered to strictly is one of non-duplication of material held in any of the other scientific and technical libraries in the country.

The following were added to the library collection during the period under review.

New Accessions	— Books	=	192
	— Standards	=	22
Donations received		=	38
Periodical titles on subscription	— Foreign	=	27
	— Local	=	5
Periodical titles received on complimentary basis		=	15

A catalogue cabinet of 30 drawers, 12 book shelves and periodical shelves were ordered and received during this period.

V. STANDING COMMITTEES AND PANELS

Research Grants Committee

Comparative figures of the funds allocated during the years 1969/70, 1970/71 and 1971/72 for the different areas of scientific activity are given in Table I.

TABLE I
Funds Approved for Research Grants*

Group	1969/70	1970/71	1971/72
Agriculture and Animal Husbandry	Rs. 57,240.00	Rs. 43,790.75	Rs. 178,504.60
Biological Sciences	Rs. 100,886.55	Rs. 140,047.00	Rs. 127,655.00
Chemical Sciences	Rs. 204,624.63	Rs. 112,573.75	Rs. 97,572.50
Physical Sciences	Rs. 39,560.00	Rs. 85,640.00	R. —
Medical Sciences	Rs. 141,835.00	Rs. 52,923.85	Rs. 59,522.56
Social Sciences	—	—	Rs. 55,451.00
Engineering & Geology	Rs. 17,036.40	—	Rs. 10,450.00
Total	Rs. 561,182.58	Rs. 434,976.25	Rs. 529,155.66

*It is the policy of the National Science Council to finance projects for periods of one, two or three years. The figures given in Table I for any particular year would include any commitments for the second year or second year and third year, for projects of two years or three years duration respectively.

Table II gives the comparative figures of the total applications for Research Grants and the final number of approved projects in the various fields for the years 1969/70, 1970/71 and 1971/72

TABLE II

Group	No. of Proposed Projects			No. of Projects Approved		
	69/70	70/71	71/72	69/70	70/71	71/72
Agriculture and Animal Husbandry	10	10	14	4	6	10
Biological Sciences	6	6	9	5	6	7
Chemical Sciences	12	6	13	7	4	6
Physical Sciences	6	5	1	2	2	—
Medical Sciences	17	15	14	9	11	9
Social Sciences	5	1	16	—	—	6
Engineering and Geology	9	1	5	1	—	1
Total	65	44	72	28	29	39

Seventy two applications for Research Grants were received for 1971/72. Although the majority of the proposed research projects seemed worthwhile, due to the very limited funds available, it was not possible to grant all the requests.

The policy of the National Science Council in awarding research grants for the year 1972 has been to :-

1. consider projects which were relevant to the economic, social and educational development of the country. Priority was to be given to lines of investigation that could have a more or less immediate impact.

2. promote post-graduate research which would eventually result in a young graduate being able to submit a thesis for a M.Sc. or Ph.D. degree in Sri Lanka. Thus the Council supported requests which would provide training for such post-graduate students.
3. not consider applicants who were already Research Grantees of the National Science Council and who have not completed their projects.
4. consider only grants that required very little or no foreign exchange, as the critical foreign exchange situation of the country imposed this restriction on the Research Grants Committee.
5. not consider proposed research projects which required large sums of monies as the funds available were very limited.

The final list of Research Grants recommended by the Council and approved by the Minister, is given in Appendix II.

Summary of Progress of Grants Awarded in 1969/70 — Twenty three grants were recommended by the National Science Council, and of these, twenty two were approved by the Ministry. Five grants were directly given by the former Ministry of Scientific Research and Housing. Subsequently, of the grants recommended by the National Science Council, two were amalgamated into one project. This left a total of twenty six research projects where progress had to be followed by the National Science Council.

This can be summarised as follows :-

- (1) Four projects have been completed.
- (2) Six projects are continuing, to the satisfaction of the National Science Council.
- (3) Thirteen projects are held up mainly due to delays in obtaining equipment and chemicals from abroad on licences issued against foreign exchange allocations. However, even in the case of some of these, preliminary work is in progress.
- (4) Three grants were recalled due to the inability of the grantees to proceed with the projects.

Summary of Progress of Grants Awarded in 1970/71 — Twenty nine grants recommended by the National Science Council were approved by the Minister of Industries and Scientific Affairs. The progress of these grants can be summarised as follows :-

- (1) Three projects have been completed.
- (2) Fifteen projects are continuing, to the satisfaction of the National Science Council.
- (3) Five projects are held up mainly due to delays in obtaining equipment and chemicals from abroad on licences issued against foreign exchange allocations. However, even in the case of some of these, preliminary work is in progress.
- (4) Three grants were recalled due to the inability of the grantees to proceed with the projects.
- (5) Of the remaining three grants, steps will be taken by the Council to recall two, while the third has shown very minimal progress.

Publications arising out of the Research Grants awarded in 1969/70 and 1970/71 are listed in Appendix IV.

Scholarships Board — Twenty nine applications were received when the National Science Council Studentships and Fellowships were advertised in the Government Gazette of 28th April 1972. Of the twenty nine applicants, eleven were not eligible. Eighteen applicants were summoned for the interview, but only twelve presented themselves for the interview. The Scholarships Board recommended the award of six Studentships and one Fellowship. These recommendations were ratified by the Council and approved by the Minister of Industries and Scientific Affairs.

Two of the six Studentship awards were not accepted. The final list of awards is given below :-

Fellowships :

Name & Institution	Project	Duration
Dr. L. J. M. Cooray, L.L.B.(Cey.); Ph.D.(Cantab) Ceylon Law College, Hultsdorf.	Constitutional Government in Ceylon, 1948-71.	One year

Studentships :

Name & Institution	Project	Supervisor
Mr. D. H. U. Wimalasiri, B.Sc. (Ceylon), Department of Physics, Vidyodaya Campus.	Electro-erosion Machining Techniques	Dr. M. P. Wijesinghe, Dept. of Physics, Vidyodaya Campus, University of Sri Lanka.
Mr. S. Ponnuchamy, B.Sc. (Madras), R 5, 166/32, Kolonnawa Road, Colombo 9.	Varietal changes in the Chem- ical composition of Essen- tial Oils.	Dr. R. O. B. Wijesekera, C.I.S.I.R., Colombo 7.
Mr. M. A. R. Kularatne, B.Sc. (Vidyodaya) Dept. of Bioscience, Vidyodaya Campus.	Environmental factors affect- ing the availability of Tuna in Ceylon waters.	Dr. K. Sivasubramaniam, Fisheries Department.
Mr. G. C. Subasinghe, B.A. (Ceylon), 6/14, Rattota Road, Mandandawela, Matale.	Some sociological aspects of fertility trends in Ceylon.	Dr. S. U. Kodikara, President, Peradeniya Campus, University of Sri Lanka.

Establishments Committee — The Establishments Committee met five times within the period under review.

This Committee meets and considers routine administrative and financial matters.

A Manual of Procedure for the staff, drawn up by the Secretary-General in consultation with the Committee was approved by Council.

On the recommendation of the Establishments Committee, the Council called for suitable designs for a crest for the National Science Council. However, none of the designs submitted in response to an advertisement was considered suitable.

The National Committee on "Man and the Biosphere" — The Committee met four times in the period under review.

Within this period, the Research Grants Committee of the National Science Council approved an increase in the allocation for Research Projects under the Man and the Biosphere programme. The grant was increased from Rs. 52,200/- to Rs. 89,100/-. The Committee agreed that the National Science Council should disburse these grants and that the conditions applicable for the Grant of Awards for approved projects of the National Science Council would apply to those research projects approved on the Man and the Biosphere programme as well.

The Research Projects approved for 1971/72 are listed in Appendix III.

The Committee considered a memorandum prepared for the Ministry of Planning and Employment by the late Dr. U. B. M. Ekanayake, on the establishment of an "Institute of Ecological Research" and submitted its recommendations to the Council for decision.

The Council, while agreeing that an Institute of this nature was highly desirable, felt that the immediate establishment of such an Institute could result in the drain of trained personnel from the existing Research Institutes and Universities.

The final recommendation of the Council on this proposal was :-

- (a) that the University of Ceylon, Peradeniya, start a one-year course of training in Ecology, and Ecological Techniques for graduates. Some of these graduates could be financed by the National Science Council by provision of Advanced Course Studentships.
- (b) that a study of —
 - (i) Terrestrial and Fresh-water Ecology, should be undertaken by a research group of a University or Research Institute, preferably from Peradeniya.
 - (ii) Marine Ecology be undertaken by a Research group of a University or Research Institute, preferably in or near Colombo.
 - (iii) Pollution studies, air and water, to be undertaken by a group, preferably in or near Colombo.

The Committee prepared and submitted a memorandum on the Establishment of a Permanent Land Use Committee. This memorandum was approved by the National Science Council and submitted to the Ministry of Planning and Employment and the Ministry of Agriculture and Lands for their consideration.

Food Panel — The Food Panel was established by the Council in 1970, to consider the application of science and scientific research to problems relating to the food and nutritional needs of Sri Lanka ; to institute, develop and co-ordinate food research, relative to the needs of the country, to examine matters of national food policy and to take necessary steps to maintain an adequate supply of scientific and technical personnel for food research and industry.

Five sub-committees were appointed to study and report on various aspects of this project. Three of these committees have finalised their studies and submitted their reports.

A study of the facilities available in the country for training and research in food science was also completed.

The Natural Resources Panel — The Panel for Natural Resources set up in 1970 has continued to function.

Its terms of reference were :-

- (a) to examine and report on the state of scientific information that is presently available in respect of the country's natural resources, as classified under the following nine categories.
 - (i) Mineral
 - (ii) Soil
 - (iii) Water
 - (iv) Energy
 - (v) Flora
 - (vi) Fauna
 - (vii) Living Aquatic Resources
 - (viii) Forestry and Forest Products
 - (ix) Wild Life and National Reserves.

The Panel was further requested to identify fields deficient in scientific information, in respect of these categories of natural resources ; to suggest schemes of priorities for undertaking both short-term and long-term programmes of investigation in these areas ; and to determine to what extent the scientific information available in these areas could be meaningfully exploited in the context of the country's current development programme.

Sub-panels were appointed to examine and report on the areas as listed above. The Sub-panels on Soil and Water have completed their surveys and submitted their reports.

VI. VISITORS AND VISITS

Council Visitors — Dr. Victor Rabinowitch, Director, Board of Science and Technology for International Development of US Academy of Sciences visited Ceylon from the 21st to 24th November 1971.

Dr. Rabinowitch met members of the Council with whom he discussed the bilateral programmes the Institutes had been involved in with developing countries. The main reason for his visit was to arrange, if possible, a workshop which would be held in Ceylon for discussing new institutional mechanisms to meet research needs; to discuss methods for the provision of training technical manpower and to devise the machinery necessary for research planning and co-ordination.

Dr. R. Glen, Secretary, Commonwealth Scientific Committee visited Ceylon in March 1972. He met and had valuable discussions with the Secretary-General.

Mr. Lang Wong, Regional Director, Canadian International Development Research Centre, Singapore, who visited Sri Lanka also met and had discussions with the Secretary-General.

Mr. H. G. S. Murthy, the United Nations Expert on Space Application was in Ceylon from the 28th to 30th December 1972. Mr. Murthy's visit was arranged and co-ordinated by the National Science Council. During his visit, Mr. Murthy met and had discussions with some of Sri Lanka's Senior Physicists.

Dr. Cyril Ponnampereuma, Director, Laboratory of Chemical Evolution of the University of Maryland, U.S.A. also visited Ceylon in July 1972. He met the Secretary-General and other members of the Council.

Dr. B. D. Nag Chaudhari — A three member delegation from Indian National Academy of Sciences and a delegate from the Indian Science Congress visited Ceylon in December to attend the 28th Annual Sessions of the CAAS. The leader of the INSA delegation, Dr. B. D. Nag Chaudhari had very valuable discussions with the Secretary-General.

Overseas Visits — Dr. G. C. N. Jayasuriya, the Secretary-General of the Council is the National Member for Sri Lanka on the Commonwealth Scientific Committee. He attended the 7th Meeting of the Committee, which was held in Canberra, Australia from 23rd October till the 30th October 1972. After that, the delegates had an opportunity of visiting some of the Scientific Institutes in New South Wales and Queensland.

On a grant from the Commonwealth Foundation, the Secretary-General was also able to visit some research institutes in New Zealand after the Commonwealth Scientific Committee meeting. This visit was made during the period 6th November to 18th November 1972.

The Secretary-General left the island on the 21st October 1972 and returned on the 21st November 1972.

APPENDIX I

MEMBERSHIP OF THE STANDING COMMITTEES AND PANELS 1971-72

I. Research Grants Committee :

PROF. B. A. ABEYWICKREMA (*Chairman*)
DR. M. A. V. DEVANATHAN
DR. S. T. G. FERNANDO
DR. G. C. N. JAYASURIYA
MR. S. F. LAURENTIUS
MR. D. B. PATTIARATCHI
DR. J. W. L. PEIRIS
PROF. K. N. SENEVIRATNE
DR. SEETHA RODRIGO (*Secretary*)

II. Scholarships Board :

MR. D. B. PATTIARATCHI (*Chairman*)
PROF. B. A. ABEYWICKREMA
DR. M. A. V. DEVANATHAN
DR. S. T. G. FERNANDO
DR. G. C. N. JAYASURIYA
MR. S. F. LAURENTIUS
DR. J. W. L. PEIRIS
PROF. K. N. SENEVIRATNE
DR. SEETHA RODRIGO (*Secretary*)

III. Establishments Committee :

DR. OSMUND JAYARATNE (*Chairman*)
MR. D. B. PATTIARATCHI
DR. G. C. N. JAYASURIYA
DR. R. C. DE SILVA
MR. J. C. P. JAYASINGHE (*Secretary*)

IV. Journal of the National Science Council — Editorial Board :

DR. G. C. N. JAYASURIYA (*Chairman*)
PROF. P. W. EPASINGHE
DR. S. T. G. FERNANDO
DR. M. L. T. KANNANGARA
PROF. S. MAHALINGAM
MISS CLODAGH NETHSINGHE
DR. C. R. PANABOKKE
MR. D. B. PATTIARATCHI
PROF. K. N. SENEVIRATNE
MR. A. E. K. TISSEVERASINGHE
DR. R. O. B. WIJESKERA
MRS. MARINA DE SILVA (*Secretary*)

V. Sub-Committee Appointed for the Revision of the National Science Council Act :

DR. O. W. JAYARATNE (*Chairman*)
MR. D. B. PATTIARATCHI
DR. R. C. DE SILVA
DR. L. P. D. GUNAWARDENA
DR. C. R. PANABOKKE
DR. G. C. N. JAYASURIYA
MRS. MARINA DE SILVA (*Secretary*)

VI. Ceylon National Committee for Radio Science, Aeronomy and Space Science :

DR. M. L. T. KANNANGARA (*Chairman*)
MR. E. K. P. EKANAYAKE
PROF. P. C. B. FERNANDO
PROF. C. DAHANAYAKE
MR. H. D. S. A. GUNAWARDENA
DR. G. C. N. JAYASURIYA
DR. O. W. JAYARATNE
MR. W. M. G. FERNANDO
MR. G. S. JAYAMAHA

VII. National Committee on Man and the Biosphere :

PROF. B. A. ABEYWICKREMA (*Chairman*)
MR. K. D. ARIYADASA
PROF. H. CRUSZ
PROF. C. DAHANAYAKE
DR. G. C. N. JAYASURIYA
MR. E. E. JEYARAJ
MR. A. S. A. PACKER
PROF. P. P. G. L. SIRIWARDENA
MR. A. E. K. TISSEVERASINGHE
MR. L. C. A. D. DE S. WIJESINGHE
MR. M. ATHPUTHANATHAN
DR. KAMALA DE SOYSA (*Secretary*)

APPENDIX II

RESEARCH GRANTS APPROVED FOR 1971/72

Ref. No :	Name, Institution/Address Title	Duration (Years)	Total amount approved
RG/72/1	Mr. C. Satkunananthan, Govt. Analyst's Dept., Colombo 7. Mercury in Fish : Fresh and Canned.	1	Rs. 3,400.00
RG/72/2	Dr. C. Sivagnanasunderam, Dept. of Public Health, Faculty of Medicine, Peradeniya Campus. 1. Study of the attitudes, beliefs and practices of ayurvedic physicians in the field of maternal and child welfare. 2. Study of the pattern of diseases in ayurvedic practice.	1	Rs. 2,115.00
RG/72/3	Drs. V. Arkley & M. Mahendran, Dept. of Chemistry, Colombo Campus. Investigation of natural products of Ceylon of possible medi- cinal use.	2	Rs. 14,600.00
RG/72/4	Dr. S. M. X. Corea, Dept. of Public Health and Preventive Medicine, Colombo Campus. Epidemiology of congenital malformation in Ceylon.	2	Rs. 9,550.00
RG/72/5	Drs. A. Vijayaragavan, N. Wijemanne, A. Thavendran, S. Subramaniam, L. M. Perera and Mr. Rudra Rasaratnam. FRCS., Colombo, General Hospital, Accident Service. Surveys of Abdominal and chest injuries.	1	Rs. 2,000.00
RG/72/6	Dr. (Mrs.) W. P. D. Pereira & Dr. J. N. O. Fernando, Dept. of Chemistry, Colombo Campus. Investigations into the reduction of contaminants in the manufacture of caustic soda and by-products.	3	Rs. 37,600.00
RG/72/7	Dr. M. P. Wesenthi-Pulle, Dept. of Agric., Peradeniya Campus. Investigations into the processing and preservation of avocado.	3	Rs. 30,100.00
RG/72/8	Dr. (Mrs.) S. Satchithanandan, Dr. D. D. Samarasinghe and Prof. F. L. W. Jayawardena, Dept. of Anatomy, Colombo Campus. A histological and histochemical study of the human placenta.	3	Rs. 25,788.00
RG/72/9	Mr. M. W. J. G. Mendis, Town and Country Planning Dept., A spatial model for regional development planning in Ceylon.	2	Rs. 14,100.00
RG/72/10	Dr. W. R. Breckenridge, Dept. of Zoology, Peradeniya Campus. Continued studies in the reproductive physiology of the snail <i>Acatina fulica</i> , egg formation.	1	Rs. 8,785.00
RG/72/11	Dr. G. Vijeyaratnam, Dept. of Pathology, Colombo Campus. Histological & Enzyme histochemical studies on the endo- metrium & cervix in Ceylonese with particular reference to changes seen following the use of various types of contracep- tives.	2	Rs. 5,677.80

Ref. No :	Name, Institution/Address Title	Duration (Years)	Total amount approved
RG/72/12	Dr. L. J. M. Cooray, 409/2, Thimbirigasyaya Road, Colombo 5. Constitutional government in Ceylon 1948-1971.	2	Rs. 9,150.00 + NSC Fellowship.
RG/72/13	Mr. Douglas Walatara, Peradeniya Campus. Construction of an English text to establish the attainment level of a pupil.	1	Rs. 6,875.00
RG/72/14	Dr. P. L. D. Waidyasekera, Dept. of Biological Sciences, Vidyodaya Campus. Ecology & microbiology of protozoa of paddy fields.	3	Rs. 27,100.00
RG/72/15	Dr. P. L. D. Waidyasekera, Dept. of Biological Sciences, Vidyodaya Campus. Environmental factors affecting the availability of Tuna in Ceylon waters.	2	Rs. 8,370.00 + NSC Studentship for 2 years.
RG/72/16	Dr. H. G. Nandadasa, Dept. of Biology, Vidyodaya Campus. Genetical investigations of bronzing disease in paddy.	3	Rs. 25,000.00
RG/72/17	Dr. (Mrs.) C. I. de Fonseka, Dept. of Bacteriology, Colombo Campus. 1. Host parasite relationship of <i>Rhinosporidium seeberi</i> in mice. 2. Immunological studies on rhinosporidiosis in man. 3. Studies on the sources of infection in rhinosporidiosis.	2	Rs. 2,414.26
RG/72/18	Dr. S. Wijesundera, Dept. of Biochemistry, Colombo Campus. Enzymatic breakdown of the fibrous components of coconut kernel.	3	Rs. 30,700.00
RG/72/19	Dr. Kamalika P. Abeyratne, Lady Ridgeway Hospital, Colombo. A study of erythrocytic enzyme glucose-6 phosphate dehydrogenase deficiency in Sri Lanka.	3	Rs. 4,902.50
RG/72/20	Prof. (Mrs.) A. M. Ladduwahetty, Dept. of Zoology, Colombo Campus. The endocrinal control of growth and reproduction in some penaeid species of Ceylon.	2	Rs. 5,000.00
RG/72/21	Dr. K. T. D. de Silva, Dept. of Chemistry, Vidyodaya Campus. Lichens of Ceylon — A study of the chemical constituents and their antibiotic activity.	3	Rs. 9,272.50
RG/72/22	Mrs. Kamini Vitharana, Laboratory of the Coconut Processing Board, Colombo. Studies on the biological aspects of the retting process for the production of coir.	3	Rs. 17,400.00
RG/72/23	Dr. M. Weerasena, Cardiac Investigation Unit, General Hospital, Colombo. Analysis of peripheral vascular disease in Ceylon (with emphasis on early diagnosis).	1	Rs. 2,300.00

Ref. No:	Name, Institution/Address Title	Duration (Years)	Total amount approved
RG/72/24	Misses V. B. de Silva & C. L. M. Nethsinghe, C.I.S.I.R., Colombo 7. A survey of information resources in Ceylon pertaining to the Sciences.* (Pure & applied sciences and social sciences)	1	Rs. 2,851.00
RG/72/25	Dr. P. A. de Silva, Katubedde Campus. Battery powered passenger car.	2	Rs. 10,450.00
RG/72/26	Mr. L. A. C. Alles, Dept. for Development of Marketing, Colombo 5. Investigation of freeze concentration of fruit juices.	2	Rs. 14,400.00
RG/72/27	Mr. L. A. C. Alles, Dept. for Development of Marketing, Colombo 5. Investigation on fermentation products (wines, alcohol) from waste fruit juices.	2	Rs. 14,400.00
RG/72/28	Mr. L. A. C. Alles, Dept. for Development of Marketing, Colombo 5. Utilization of limes (<i>citrus aurantifolia</i>).	2	Rs. 14,400.00
RG/72/29	Drs. D. D. Wanasinghe, and M. R. M. Pinto, Veterinary Research Institute, Dept. of Agriculture, Peradeniya Campus. A study of mycobacteriosis (tuberculosis) in animals (domes- ticated & wild) in Ceylon.	1	Rs. 3,775.00
RG/72/30	Dr. K. Vivekanandan, Forest Dept., Colombo 2. Vegetative propagation of species of <i>Pinus</i> grown in Ceylon	2	Rs. 749.60 NSC Studentship for 2 years.
RG/72/31	Dr. C. Barr-Kumarakulasinghe and Dr. M. R. M. Pinto, Faculty of Medicine, Peradeniya. A study of extra pulmonary tuberculosis in Ceylon.	1	Rs. 4,775.00
RG/72/32	Dr. S. Selvanayagam, Dept. of Geography, Peradeniya Campus. Technology and employment in peasant agriculture in Ceylon.	1	Rs. 7,200.00
RG/72/33	Mr. Sunimal Fernando, Dept. of Sociology, Peradeniya Campus. The changing structure of intercaste relations in the Tangalle area.	1	Rs. 6,875.00
RG/72/34	Prof. P. Seneviratne, Dept. of Veterinary Science, Peradeniya Campus. Studies of <i>Sarcocystis fusiformis</i> of cattle.	2	Rs. 10,900.00
RG/72/35	Mr. R. W. A. S. B. Rajaguru, Dept. of Animal Husbandry, Peradeniya. Energy and protein supplementation in animal rations.	2	Rs. 32,180.00
RG/72/36	Dr. (Mrs.) A. S. Seneviratne, Dept. of Botany, Colombo Campus. Development of a yeast culture to give higher production of rectified spirits.	3	Rs. 10,800.00 from N.S.C. Rs. 10,800.00 from Sugar Cor- poration.

Ref. No:	Name, Institution/Address Title	Duration (Years)	Total amount approved
RG/72/37	Dr. B. A. Baptist, Dept. of Agriculture, Peradeniya Campus. Protection of sugar cane crops from wild boar.	3	Rs. 10,800.00 from N.S.C. Rs. 10,800.00 from Sugar Corporation.
RG/72/38	Prof. M. U. S. Sultanbawa, Dept. of Chemistry, Peradeniya Campus. Collection of Data on Industrial Raw materials.	6 weeks	Rs. 2,000.00
RG/72/39	Dr. (Miss) U. Kandiah, Dept. of Botany, Colombo Campus. Virus disease of papaw (<i>Carica papaya</i>) in Ceylon.	3	N.S.C. Studentship for 3 years.

APPENDIX III

PUBLICATIONS OF RESEARCH GRANTEES

1. NSCA/1/17/2 - Prof. M. U. S. Sultanbawa

- 1.1 SULTANBAWA, M. U. S. and GUNASEKERA, S. P.
Isolation and partial structures of six new Triterpenoids from *Trichadenia zeylanica* Thw. (S : Tolol, Titta), Flacourtiaceae
Proc. Cey. Ass. Advmt. Sci. (1), p. 119 (1972)
- 1.2 SULTANBAWA, M. U. S. and GUNASEKERA, S. P.
Extractives of *Hydnocarpus venenata* Gaertn. (S : Makulu), Flacourtiaceae
Proc. Cey. Ass. Advmt. Sci. (1), p. 120 (1972)
- 1.3 SULTANBAWA, M. U. S. and SELLIAH, S. S.
Extractives of *Calophyllum cuneifolium* Thw., Guttiferae
Proc. Cey. Ass. Advmt. Sci. (1), p. 121 (1972)
- 1.4 SULTANBAWA, M. U. S. and SUBRAMANIAM, G.
Extractives of *Artocarpus nobilis* Thw., (S : Waldel), Moraceae
Proc. Cey. Ass. Advmt. Sci. (1), p. 121 (1972)
- 1.5 SULTANBAWA, M. U. S., SOTHEESWARAN, S. and GUNASEKERA, S. P.
Isolation and characterization of some Triterpenoid acids from the resins of *Dipterocarpus hispidus* Thw. (S : Buhora), *Dipterocarpus zeylanicus* Thw. (S : Galhora) and *Doona congestiflora* Thw. (S : Tiniya)
Proc. Cey. Ass. Advmt. Sci. (1), p. 123 (1972)
- 1.6 SULTANBAWA, M. U. S., SELLIAH, S. S. and OLLIS, W. D.
Extractives of *Garcinia echinocarpa* Thw. (S : Madol), Guttiferae
Proc. Cey. Ass. Advmt. Sci. (1), p. 124 (1972)
- 1.7 SULTANBAWA, M. U. S., SOMANATHAN, R. and DAHANAYAKE, M.
Extractives of *Calophyllum walkeri* Wight and *Calophyllum pulcherimum* Wall, Guttiferae
Proc. Cey. Ass. Advmt. Sci. (1), p. 129 (1972)
- 1.8 SULTANBAWA, M. U. S., SELLIAH, S. S. and RAMACHANDRAN, S.
Extractives of *Mesua ferrea* L. (Form *M. salicina* Pl. & Tri), Guttiferae
Proc. Cey. Ass. Advmt. Sci. (1), p. 129 (1972)
- 1.9 SULTANBAWA, M. U. S. and SELLIAH, S. S.
Biflavonoids of *Garcinia terpnophylla* Thw. (S : Kekatiya), Guttiferae
Proc. Cey. Ass. Advmt. Sci. (1), p. 71 (1971)
- 1.10 SULTANBAWA, M. U. S. and GUNASEKERA, S. P.
Extractives of *Hydnocarpus octandra* L. (S : Waldivul), Flacourtiaceae
Proc. Cey. Ass. Advmt. Sci. (1), p. 71 (1971)
- 1.11 SULTANBAWA, M. U. S. and GUNASEKERA, S. P.
Extractives of *Trichadenia zeylanica* Thw. (S : Tolol, titta), Flacourtiaceae. Part II
Proc. Cey. Ass. Advmt. Sci. (1), p. 72 (1971)
- 1.12 SULTANBAWA, M. U. S. and SUBRAMANIAM, G.
Flavanoids of *Wormia triquetra* Retts (S : Diya para) and *Dillenia indica* L. (S : Honda para), Dilleniaceae
Proc. Cey. Ass. Advmt. Sci. (1), p. 80 (1971)

- 1.13 SULTANBAWA, M. U. S. and SELIAH, S. S.
Extractives of *Kayea stylosa* Thw. (S : Suwanda), Guttiferae
Proc. Cey. Ass. Advmt. Sci. (1), p. 81 (1971)
- 1.14 SULTANBAWA, M. U. S. and SELIAH, S. S.
Extractives of *Mesua thwaitesii* Planch and Triana (S : Diyana), Guttiferae. Part II
Proc. Cey. Ass. Advmt. Sci. (1), p. 76 (1970)
- 1.15 SULTANBAWA, M. U. S. and SELIAH, S. S.
Extractives of *Garcinia terpnophylla* Thw. (S : Kekatiya) Guttiferae
Proc. Cey. Ass. Advmt. Sci. (1), p. 76 (1970)
- 1.16 SULTANBAWA, M. U. S. and SUBRAMANIAM, G.
Extractives from plants of the family Dilleniaceae. Part II
Proc. Cey. Ass. Advmt. Sci. (1), p. 77 (1970)
- 1.17 SULTANBAWA, M. U. S. and GUNASEKERA, S. P.
Extractives of *Trichadenia zeylanica* Thw. (S : Tolol, titta), Flacourtiaceae
Proc. Cey. Ass. Advmt. Sci. (1) p. 77 (1970)
- 1.18 SULTANBAWA, M. U. S., SOTHEESWARAN, S. and GUNASEKERA, S. P.
Examination of the resins of *Dipterocarpus hispidus* Thw. (S : Buhora) and *Dipterocarpus zeylanicus*
Thw. (S : Galhora, hora)
Proc. Cey. Ass. Advmt. Sci. (1), p. 78 (1970)
2. NSCA/1/17/5 - Dr. A. R. T. de Silva
- 2.1 DE SILVA, A. R. T.
High strength materials from the melt
Proc. Cey. Ass. Advmt. Sci. (1), p. 58 (1970)
- 2.2 DE SILVA, A. R. T. and THALAGALA, L. V.
Creep of hot-rolled mild steel bars
Proc. Cey. Ass. Advmt. Sci. (1), p. 47 (1971)
- 2.3 DE SILVA, A. R. T. and IMPANATHAN, S.
Tensile and compressive properties of plywood
Proc. Cey. Ass. Advmt. Sci. (1), p. 48 (1971)
- 2.4 DE SILVA, A. R. T. and CHADWICK, G.A.
The thermal stability of the fibrous Fe-Fe₂B, Eutetic alloy
Metal Science J. (U.K.) (1971)
- 2.5 DE SILVA, A. R. T.
Failure of railway drawbar hooks
Proc. Cey. Ass. Advmt. Sci. (1), p. 74 (1972)
- 2.6 DE SILVA, A. R. T. and JAYATILAKA, A. DE S.
The fatigue resistance of rotating shafts
Proc. Cey. Ass. Advmt. Sci. (1), p. 76 (1972)
- 2.7 DE SILVA, A. R. T.
Metallurgical analysis of service failures
Bull. Inst. of Engineers (Cey.), Dec. 1972

3. NSCA/1/17/6 - Mr. V. Pavanasasivam

- 3.1 PAVANASASIVAM, V. and KALPAGE, F. S. C. P.
Micronutrients in soils with reference to Ceylon - a review
Tropical Agriculturist (in press)
- 3.2 PAVANASASIVAM, V. and KALPAGE, F. S. C. P.
Some manganese relationships in high organic matter content montane soils
Proc. Cey. Ass. Advmt. Sci. (1), p. 46 (1972)

4. NSCA/1/17/7 - Prof. S. N. Arsekularatne

- 4.1 ARSEKULARATNE, S. N.
Toxic effects of *Borassus flabellifer* (Palmyrah palm) in rats
British J. Exptl. Path. **52**, pp. 524-537 (1971)
- 4.2 ARSEKULARATNE, S. N.
Aflatoxin contamination of coconut products
Cey. J. med. Sci. **20**, p. 60 (1971)
- 4.3 ARSEKULARATNE, S. N.
Variation in aflatoxin content of cultures of *Aspergillus flavus* with duration of incubation and its significance in studies on aflatoxin production.
J. appl. Bact. (1972)
- 4.4 ARSEKULARATNE, S. N. and SAMARAJEWA, U.
Methods for estimation of aflatoxins in coconut products
Proc. Cey. Ass. Advmt. Sci. (1), p. 31 (1972)

5. NSCA/1/17/18 - Prof. A. C. J. Weerakoon

- 5.1 JINADASA, J.
Bionomics of flying fish - *Hirundichthys coromandelensis*
Thesis for the Master of Science Degree, University of Ceylon
- 5.2 JINADASA, J.
Spawning behaviour of flying fish - *Hirundichthys Coromandelensis*
Proc. Cey. Ass. Advmt. Sci. (1), p. 60 (1971)
- 5.3 JINADASA, J.
Exploitation of the flying fish resource off the East coast of Ceylon
Proc. Cey. Ass. Advmt. Sci. (1), p. 59 (1971)
- 5.4 JINADASA, J.
Oceanographic factors of the coastal waters off Trincomalee
Proc. Cey. Ass. Advmt. Sci. (1), p. 91 (1972)
- 5.5 JINADASA, J.
Predators of the flying fish - *Hirundichthys coromandelensis* Hornell, and its suitability as a bait fish
Proc. Cey. Ass. Advmt. Sci. (1), p. 88 (1972)
- 5.6 JINADASA, J.
A taxonomic notes on a collection of flying fishes from Ceylon waters
Bull. Fish. Res. Stn. Ceylon. **22**, pp. 5-16 (1971)

6. NSCA/1/17/23 D - Prof. H. H. Costa

6.1 COSTA, H. H. and DE SILVA, S. S.

Hydrobiology of Colombo (Beira) Lake I Diurnal variations in temperature, hydrochemical factors and zooplankton.
Bull. Fish. Res. Stn. Ceylon., 20, pp. 141-149 (1969)

6.2 COSTA, H. H. and DE SILVA, S. S.

Hydrobiology of Colombo (Beira) Lake II. Seasonal variations in physico-chemical characteristics
Bull. Fish. Res. Stn. Ceylon. (in press)

7. NSCA/1/17/23 E - Dr. A. T. S. Paul

7.1 PAUL, A. T. S. and BALAKRISHNAN, S.

A new low cost heart-lung machine
Cey. med. J. 16, (1), (1971)

8. NSCA/1/17/28 - Dr. W. R. Breckenridge

8.1 BRECKENRIDGE, W. R. and FALLIL, S. F. M.

Histology and histochemistry of the uterus of *Achatina fulica* (Gastropoda : Pulmonata, Stylommatophora)
Proc. Cey. Ass. Advmt. Sci. (1), p. 83 (1972)

9. NSCA/1/17/41 - Prof. K. N. Seneviratne

9.1 SENEVIRATNE, K. N., PEIRIS, O. A. and WEERASURIYA, A.

The effect of hyperkalaemia on the excitability of peripheral nerve
J. Neurol. Neurosurg. Psychiat. 35, pp. 149-155 (1972)

9.2 SENEVIRATNE, K. N.

The permeability of blood nerve barriers in the diabetic rat
J. Neurol. Neurosurg. Psychiat. 35, pp. 156-162 (1972)

9.3 SENEVIRATNE, K. N. and VAIRAVANATHAN, S.

Nodal gap substance of diabetic nerve
Proc. Cey. Ass. Advmt. Sci. (1), p. 35, (1972)

9.4 SENEVIRATNE, K. N. and WEERASOORIYA, A.

Properties of para-nodal gap substance in diabetic nerve
Proc. Cey. Ass. Advmt. Sci. (1), p. 36 (1972)

10. NSCA/1/17/45 - Dr. M. W. C. Dharmawardena

10.1 LIYANAGE, A. W.

Comparative account of yeasts isolated from fermented saps of palms in Ceylon
Thesis for the Master of Science Degree, University of Ceylon

11 NSCA/1/17/49 and NSCA/1/17/50 - Dr. N. Nagaratnam

- 11.1 NAGARATNAM, N., DE SILVA, D. P. K. M., ATAPATTU, A. M. P. and SUKUMARAN, P.K.
Sickle-cell haemoglobin D disease in the Sinhalese
Proc. Cey. Ass. Advmt. Sci. (1), p. 10 (1972)
- 11.2 NAGARATNAM, N., DE SILVA, D. P. K. M. and DE SILVA, S. P.
Active chronic hepatitis in Sri Lanka patients
Proc. Cey. Ass. Advmt. Sci. (1), p. 26 (1972)
- 11.3 NAGARATNAM, N., GUNAWARDENA, K. R. W. and DE SILVA, D. P. K. W.
Infectious hepatitis - a multi system disease
Cey. med. J. 17, pp. 68-74 (1972)
- 11.4 NAGARATNAM, N., DE SILVA, D. P. K. M. and GUNAWARDENA, K. R. W.
Acute haemolytic anaemia complicating infectious hepatitis
J. Colombo Gen. Hosp. 3, pp. 92-97 (1972)

NATIONAL SCIENCE COUNCIL OF SRI LANKA
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST DECEMBER, 1972 (15 MONTHS)

<i>Staff Emoluments</i>		Rent Received	2,700.00
Salaries & Allowances	120,729.00		
Employees Provident Fund (Council Contribution)	17,355.00		
Overtime	3,045.00		
	141,129.00		
<i>Office Administration</i>			
Travelling (Official)	1,818.00		
Stationery	7,950.00		
Rent	18,750.00		
Electricity	1,191.00		
Add: Provision	100.00		
	1,291.00		
Telephone	10,740.00		
Less: Pre payment of rental	2,645.00		
	8,095.00		
Less: Telephone Deposit	405.00		
	7,690.00		
Add: Provision	300.00		
	7,990.00		
Postage	2,319.00		
Less: Monies lying with P.M.G.	417.00		
	1,902.00		
Depreciation of Office Equipment & Furniture	9,701.00		
Bicycle	28.00		
	9,729.00		
Provision for Audit Fees	500.00		
Bank Charges	383.00		
Sundry Expenses	2,572.00		
Conservancy	245.00		
Add: Provision	15.00		
	260.00		
Entertainment	113.00		
Medical Expenses	441.00		
Advertising	5,190.00		
Contingencies	165.00		
	50,054.00		
<i>Council Expenditure</i>			
Travelling (Council members)	2,531.00		
Seminars & Symposia	2,629.00		
Printing & Publications	2,640.00		
	7,800.00		
Excess of Expenditure over Income to be transferred to the N.S.C. Capital Fund A/c.			245,963.00

Studentship Allowances (Research Grants)	24,400.00		
Subscriptions to Inter. Scientific Unions	10,930.00		
Assistance to Inter. Scientific Project-Work participation in Ceylon	4,883.00		
Incidental expenses for visiting scientists	709.00		
Less : Money in hand	242.00		
	<u>467.00</u>	48,480.00	
		<u>248,663.00</u>	<u>248,663.00</u>

*Other sources
Man & the Biosphere*

Research Grants	34,375.00		
Studentship Allowances for Research Projects	12,800.00		
Salaries & Allowances	1,590.00		
E.P.F. (Council Contribution)	238.00		
Sundry Expenses	105.00		
		<u>49,108.00</u>	

Manpower & Expenditure

Salaries & Allowances	795.00		
E.P.F. (Council Contributions)	119.00		
Sundry Expenses	445.00		
		<u>1,359.00</u>	

UNESCO Early Evolution of Life

Sundry Expenses	4,986.00		
Bank Charges	24.00		
		<u>55,477.00</u>	

Excess of Expenditure over Income to be transferred to Fund A/c received from other sources	<u>55,477.00</u>
	<u>55,477.00</u>

Chairman
National Science Council

Secretary-General
National Science Council

NATIONAL SCIENCE COUNCIL OF SRI LANKA
BALANCE SHEET AS AT 31ST DECEMBER, 1972 (15 MONTHS)

National Science Council Fund

Monies voted by Parliament & paid into the Fund during the period 1st July 1968 to 30th Sept., 1971	489,660.00
Less: Amount transferred to Account No. 2	8,000.00
	<u>481,660.00</u>
Add: Amount paid during the year	392,500.00
Amount received from Sri Lanka Sugar Corporation for Special Grants	7,200.00
	<u>881,360.00</u>
Less: Excess of Expenditure over Income charged to the Fund during the period 1st July 1968 to 30th Sept., 1971	230,249.00
Expenditure transferred to the N.S.C. Fund during the year	245,963.00
	<u>476,212.00</u>
	405,148.00
Add: Adjustment made in the Telephone Deposit A/c.	25.00
	<u>405,173.00</u>
<i>Current Liabilities</i>	
Expense Creditors	915.00

Fixed Assets

	Cost as at 1st October 1971	Additions during the year	Accumulated Depreciation up to 31-12-72	Balance as 31-12-1972
Office Equipment & Furniture	39,540.00	61,304.00	15,251.00	85,593.00
Bicycle	337.00	—	84.00	253.00
Library	1,356.00	18,083.00	—	19,439.00
	<u>41,233.00</u>	<u>79,387.00</u>	<u>15,335.00</u>	<u>105,285.00</u>
Advance made against the purchase of a Motor Car				39,869.00
Advance made for the installation of Tele. D.P.				11,026.00

Current Assets

Treasury Deposit	216,160.00
Telephone Deposit	430.00
Advance (Festival)	160.00
Distress Loan	23.00
Prepayment	2,645.00
Monies lying with P.M.G. for postage	417.00
Money in hand (to be deposited to Bank A/c)	242.00
Balance at Bank	29,631.00
Cash in Hand	200.00

249,908.00

406,088.00

406,088.00

Other Sources

Man & the Biosphere Fund (Grant for 1971/72)	89,100.00
Manpower & Expenditure	3,000.00
UNESCO Early Evolution of Life	5,000.00
Man & the Biosphere Fund (Grant for 1973)	33,750.00
Survey of Raw Materials	2,000.00
	132,850.00

Less: Excess of Expenditure transferred to the Funds 55,477.00

77,373.00

Fixed Assets

Office Equipment (bought during the year) 1,875.00

Current Assets

Balance at Bank 75,498.00

77,373.00

73-02-12

Chairman
National Science Council.

Secretary-General
National Science Council

Certificate of the Auditor General

The accounts of the National Science Council of Ceylon Corporation/Board for the year period/ended 31st December, 1972, were audited under my direction in pursuance of Section 90 (1) of the Constitution of Sri Lanka read in conjunction with Section 13 (1) of the Finance Act, No. 38 of 1971.

My observations on these accounts which should be published in terms of Section 14 (2) (c) of the Finance Act, No. 38 of 1971 are contained in my report of even date addressed to the Chairman of the Corporation/Board.

Audit Office,
Colombo 7
16th October, 1973

Auditor General

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EXPENSE CREDITORS AS AT 31ST DEC., 1972

1. Provision for Electricity	Rs. 100.00
2. Provision for Telephone Charges	Rs. 300.00
3. Provision for Audit Fees	Rs. 500.00
4. Provision for Conservancy		...	Rs. 15.00
			<u>Rs. 915.00</u>

My No. (T-5) 13/6(71-72)
 Auditor General's Department
 Torrington Square,
 Colombo 7.

16th October, 1973.

Chairman,
 National Science Council of Ceylon,
 47/5, Maitland Place,
 Colombo 7.

*Auditor General's Report on National Science Council of Ceylon
 for the 15 months ending on 31st December, 1972*

The accounts of the N.S.C. for the period 1st October, 1971 to 31st December, 1972 were audited under my directions, in terms of section 90 of the Constitution of Sri Lanka and section 13 (7) of the Act No. 38 of 1971. The following is my report, submitted under section 14 (2) of the said Act.

Financial Review

1. Financial Results

Income	For the 15 months ending on 31st December 1972		For the 12 months ending on 30th September 1971	
	Rs.	Rs.	Rs.	Rs.
Rent		2,700		
<i>Less expenses :-</i>				
Staff Emoluments	141,129	—	59,612	—
Office Administration	59,054	—	30,012	—
Council Expenses	48,480	—	10,847	—
Other Expenses	55,447	—	—	—
		<u>304,140</u>		<u>100,471</u>
Excess of Expenditure over Income		<u>301,440</u>		<u>100,471</u>

The item of expenses referred to above as other expenses comprise items such as Man and the Biosphere Programme, Manpower and Expenditure Survey, and the UNESCO work-shop on Early Evolution of Life, which were financed from sources outside the government grant.

2. Financial Structure

	For the 15 months ending on 31st December 1972 Rs.	For the 12 months ending on 30th September 1971 Rs.
Resources		
Balance of Government grant	4,05,148	2,59,411
Current Liabilities	940	1,065
Balance of other grants	77,373	—
	<u>4,83,461</u>	<u>2,60,476</u>
	For the 15 months ending on 31st De- cember 1972 Rs.	For the 12 months ending on 30th Sep- tember 1971 Rs.
Utilisation		
Fixed Assets	1,07,160	35,626
Advances on Assets	50,895	—
Current Assets	3,25,406	2,24,850
	<u>4,83,461</u>	<u>2,60,476</u>

Non-Governmental Funds

1. Man and the Biosphere Programme Fund

At the time of audit 7 major research projects had been approved under this fund. Out of the seven projects approved, work had not commenced on two of the projects while work on the other five were in progress.

2. Survey on Man Power and Expenditure

This survey was abandoned, because the response to the questionnaire sent out on this survey was poor. Out of the grant of Rs. 2,000/- allocated for this survey, Rs. 1,359/- had been spent.

3. Work shop on Early Evolution of Life

A seminar was held with the participation of some foreign scientists. Out of the grant of Rs. 5,000/- received for this project from the UNESCO, Rs. 4,986/- had been spent.

4. Raw Materials Survey

Out of Rs. 2,000/- received for this, Rs. 1,440/- had been spent. The survey was in progress.

3. Sources of Funds & Utilisation

Source	For the 15 months ending 1972
	Rs.
N.S.C. Grant	3,92,500
Man & the Biosphere Programme Fund	1,22,850
Raw Materials Survey Fund	2,000
Grant from Sugar Corporation	7,200
	5,24,550
	5,24,550
	Rs.
Utilisation	
Fixed Assets	71,534
Advances on Assets	50,895
Current Assets	1,00,556
Current Liabilities	125
Excess of Expenditure over income	3,01,440
	5,24,550
	5,24,550

Audit of the Library

It was observed at the audit, that a complete register of publications including library books was not maintained. Although there was an Accession Register in the library, only 283 publications had been recorded in it. According to the lists which were prepared for purposes of audit, it appeared that there were 430 unrecorded publications, including books. The Scientific Officer who was in charge of the library, failed to certify, that, these were the only unrecorded publications. She also admitted that figures submitted later were also not complete.

It was seen, that the value of accumulated purchases of the library, at the end of the period under review was Rs. 19,439/-. The publications received as donations from various local and foreign institutions had not been valued. The library should have had a proper record of these items. Failure to keep proper records of publications of a value of such magnitude cannot be justified in audit, when the library had been under a Scientific Officer and the Council had incurred expenditure for a Library Assistant appointed solely for the library since April, 1972.

Although a complete audit was not possible due to the non-availability of a complete list of books, a test check disclosed the following :

Eleven (11) Annual Reports which had not been recorded, but owned by the library, according to the list prepared later, had been removed from the library without any proof of issue. Accordingly, the number of publications may have been lost from the library cannot be estimated in the absence of entries of receipts or issues.

Besides, there were a number of entries of issues by the library which were not supported by the signature or an entry of the recipient. It was observed at the audit, that some publications received as donations had been discarded as unnecessary. If such donations are considered unnecessary and are to be discarded in future, I wish to point out that it should be done subject to a proper internal control.

In view of the above, it should be mentioned that the absence of a satisfactory system of control in the library, may lead to abuses

Verification of Stationery Stocks

Although the stationery stocks are of a considerable value, there does not appear to be a satisfactory internal control. At the physical verification of the stationery stocks, it was observed that there were shortages and excesses when compared with the book values. When inquiries were made as to why the receipts and issues of stationery were not properly recorded, it was pointed out that the Accounts Clerk who was handling this matter was burdened with work which he could not cope with. However, it was found that the Council's stationery was not used in a wasteful or careless manner. Nevertheless, the Assistant Secretary agreed to maintain a proper control of stationery.

Control regarding use of telephones

The Council now has 3 direct lines and a Telephone Switch Board with 16 extensions. The expenditure incurred by the Council for the telephone services during the accounting period had been Rs. 7,990/-. Although these telephones are being used for private calls as well, it was observed that there was no proper internal control regarding their use. A Register has been maintained by the Telephone Operator, from 13th July, 1972 to record the nature of calls taken and to charge for private calls. A similar record was not kept prior to that date. In regard to the other telephones even control of this nature was not found and as such it was not possible to ensure that private calls had been taken.

It is suggested that there should be a proper internal control to ensure that every private call taken is being charged for.

Submission of Accounts

Separate accounts have been submitted in respect of Government Grants and non-Governmental Grants.

From March, 1972 a separate Bank Account, a Cash Book and other accounts had been maintained for non-Governmental Grants. Similarly, two different Income & Expenditure Accounts and two different Balance Sheets had been prepared.

Observations on Accounting Matters

It was observed that there were a number of instances where the accounting principles were not adhered to in the preparation of Ledger Accounts as well as Final Accounts for the accounting period.

According to the stationery stock book there was a considerable stock of stationery as at 31st December, 1972. However, the stock has not been valued on the date of the Balance Sheet and in preparing the Balance Sheet the value of these stocks have been completely omitted. Although the total purchases of stationery for the accounting period had been written off to Income & Expenditure account, the Balance value, at the end of the accounting period had not been adjusted to that expenditure.

The Petty Cash Balance had been shown as Rs. 200/- as at date of the Balance Sheet. The Petty Cash imprest had been renewed on the 26th December 1972 and up to 31st, Rs. 65/95 had been spent out of which Rs. 32/35 had been for Sundry Expenses and Rs. 33/60 for Office travelling. Therefore, the Petty Cash on the date of the Balance Sheet should have been Rs. 134/05.

Sundry Expenses and Office travelling met from Petty Cash had not been included in the Income & Expenditure account.

The accessories purchased with Petty Cash had been shown as an expenditure relevant to the accounting period by debiting the value of those to Sundry Expenditure account and thereby being written off to the Income & Expenditure account. It is pointed out that even minor assets of a permanent nature should not be treated as revenue expenditure.

A sum of Rs. 2,576/- shown as Sundry Expenditure in the Ledger had been posted to the Income & Expenditure account as Rs. 2,572/-.

No books of prime entry other than the Cash Book had been maintained. This while being not in conformity with accounting principles made it difficult to verify in audit the accounting adjustments.

A number of Ledger accounts were not properly closed and there were signs of scribbling, cancelling and altering the accounts. This cannot be approved in the audit.

When inquiries were made about the short comings, the Secretary of the Council pointed out that this was due to there being only one Accounts Clerk in the Finance Division who had to be entrusted with a number of duties outside the Finance Division.

Irregularities, Losses and Wasteful Expenses

A building was taken on rent by the Institute on 27th December, 1971. It was provided with electricity and Watchers too were employed to take care of this building. The expenditure on electricity and the wages paid to the Watchers appear to be wasteful. But on 24th March 1972 it was given back to the owners as it was not spacious enough.

Sgd. P. M. W. WUAYASURIYA
Auditor General

Comments on the Auditor General's Report

When the representative of the Auditor General's Department came to Audit the accouts during the period under review, the Secretariat of the Council had just moved into its new building at 47/5, Maitland Place. We occupied the new premises on the 29th March 1973. For a period of about four years prior to that, the Secretariat occupied rented quarters at, No. 69, Horton Place, Colombo 7. The accommodation in the old premises was not at all conducive to any expansion programme, either by way of work or by way of employing new staff. The staff available when we moved into the new building, as far as the administration was concerned was one Administrative Officer, one Accounts Clerk and one Establishments Clerk. Thus, it will be seen that during the period under review the entirety of the administrative and financial management of the affairs of the Council were handled by these three people and the lapses pointed out in the report were due primarily and almost wholly to the lack of sufficient staff. Due to the fact that we have moved to new premises, we have now recruited an Accountant, another Accounts Clerk, another Administrative Clerk and a Chief Clerk for the Administration Branch of our Office. Thus it will be seen that we were working under very trying conditions during the period under review.

As regards the Library, we have again a similar problem to that faced by the Administration Branch. In our former premises, the entire Library was housed in a room of about 150 sq. ft. In fact, most of the books then were in crates and steel cupboards, and we were not even able to display them. Fortunately, we have on our staff, a Scientific Officer, who has had previous experience of Library work. This Officer was not recruited to do Library work, but was temporarily put in charge of the Library in addition to her other duties. As yet we have not been able to recruit someone to be in charge of the Library.

The Library Assistant referred to, was appointed in April 1972. Besides handling all the routine work involved in the organization and administration of the Library, this Assistant has spent a considerable proportion of her working time, on other duties assigned to her, such as typing of reports/corespondence for other Scientific Officers, and acting in the capacity of a Secretarial Assistant to the Secretary of the Editorial Board of the Journal of the National Science Council. In this capacity, the Library Assistant handled all the typing connected with the preparation of the Inaugural Issue of the Journal, Pre-publication Notices, Instructions to Contributors and other correspondence. This work should normally have been assigned to a special assistant. However, due to the staff position at the time, the considerable volume of work on this subject was handled by the Library Assistant in addition to her other duties.

Steps have now been taken to correct the deficiencies pointed out by the Auditor-General.

As regards the comment on Irregularities, Losses and Wasteful expenses, this was due to circumstances not within the control of the National Science Council and mainly due to the delay in the handing over of the new premises at No. 47/5, Maitland Place, Colombo 7 to us.

Sgd. O. W. JAYARATNE
Chairman

National Science Council of Sri Lanka