SOUTH AFRICAN
COUNCIL FOR SCIENTIFIC
AND INDUSTRIAL RESEARCH

# EERSTE JAARVERSLAG
# 1945-46
# FIRST ANNUAL REPORT

SUID-AFRIKAANSE
WETENSKAPLIKE EN NYWERHEID-
NAVORSINGSRAAD

SUID-AFRIKAANSE WETENSKAPLIKE EN NYWERHEID-NAVORSINGSRAAD.

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*Privaatsak 189, Pretoria.*
*1 November 1946.*

*Meneer,*

*Ek het die eer om u hierby die eerste jaarverslag van die Wetenskaplike en Nywerheidnavorsingsraad vir die jaar geëindig 5 Oktober 1946 voor te lê.*

*In ooreenstemming met die bepalings van die Wet op die Wetenskaplike Navorsingsraad bevat hierdie dokument die verslag van die Raad en 'n balansstaat en 'n staat van inkomste en uitgawe met die sertifikaat van die Kontroleur en Ouditeur-generaal vir die boekjaar eindigende 31 Maart 1946.*

*Dienswillig die uwe,*

*B. F. J. SCHONLAND.*
*President: Wetenskaplike en Nywerheidnavorsingsraad.*

*Die Hoogedele J. C. Smuts, C.H., K.C., D.T.D.,*
*Eerste Minister van die Unie van Suid-Afrika*
*Kantoor van die Eerste Minister,*
*Uniegebou,*
*PRETORIA.*



SOUTH AFRICAN COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH.

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*Private Bag 189, Pretoria.*
*1st November, 1946.*

*Sir,*

*I have the honour to present to you herewith the First Annual Report of the Council for Scientific and Industrial Research for the year ending October 5th, 1946.*

*In accordance with the requirements of the Scientific Research Council Act, this report contains the report of the Council and a balance-sheet and Statement of Income and Expenditure certified by the Controller and Auditor-General for the financial year ending 31st March, 1946.*

*I have the honour to be,*
*Sir,*
*Your obedient Servant,*

*B. F. J. SCHONLAND.*
*President: Council for Scientific and Industrial Research.*

*The Right Honourable J. C. Smuts, C.H., K.C., D.T.D.,*
*Prime Minister of the Union of South Africa,*
*Prime Minister's Office,*
*Union Buildings,*
*PRETORIA.*

## DIE SUID-AFRIKAANSE WETENSKAPLIKE EN NYWERHEID-NAVORSINGSRAAD.

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## EERSTE JAARVERSLAG.

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### 1. INWYDING VAN DIE RAAD.

Die Goewerneur-generaal het die Raad op 5 Oktober 1945 ingevolge die Wet op die Wetenskaplike Navorsingsraad ingestel en die Eerste Minister, die Hoogedele J. C. Smuts, C.H., K.C., D.T.D., het die Raad die eer bewys deur op die eerste vergadering op 8 Oktober van dié jaar 'n toespraak te hou.

Gedurende die jaar onder beskouing was die volgende persone lid van die Raad:—

Dr. B. F. J. Schonland (President.)

Dr. H. J. van Eck
Dr. P. J. du Toit
Dr. R. W. Wilcocks
(Vir drie jaar aangestel.)

Dr. S. H. Haughton
Mnr. T. P. Stratten
Dr. Bernard Price
(Vir twee jaar aangestel.)

Dr. J. Smeath-Thomas
Dr. F. J. de Villiers
Mnr. J. E. Worsdale
(Vir een jaar aangestel.)

### 2. ALGEMENE AFBAKENING VAN WERKSAAMHEDE.

Die Raad het sy inleidende program en aanvangsbeleid in 'n wydverspreide pamflet onder die titel „Oogmerke en Beleid—'n Aanvanklike Verklaring" bekendgemaak. Dit het die goedkeuring van die Regering weggedra en is in albei Huise van die Parlement ter tafel gelê.

Gedurende die jaar het die Raad as volg te werk gegaan om sy aangekondigde beleid ten uitvoer te lê: instelling van sekere nasionale laboratoriums en navorsingsdienste en aanstelling van die personeel daarvoor, organiseer en uitvoer van 'n program tot aanmoediging en



## THE SOUTH AFRICAN COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH.

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## FIRST ANNUAL REPORT.

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### 1. INAUGURATION OF THE COUNCIL.

The Council was set up by the Governor-General in terms of the Scientific Research Council Act on October 5th, 1945, and the Prime Minister, the Right Honourable J. C. Smuts, C.H., K.C., D.T.D., honoured it by delivering an address at its first meeting on October 8th of that year.

The membership of the Council during the year under review has been:—

Dr. B. F. J. Schonland (President.)

Dr. H. J. van Eck
Dr. P. J. du Toit
Dr. R. W. Wilcocks
(Appointed for 3 years.) 1948

Dr. S. H. Haughton
Mr. T. P. Stratten
Dr. Bernard Price
(Appointed for 2 years.) 1947

Dr. J. Smeath-Thomas
Dr. F. J. de Villiers
Mr. J. E. Worsdale
(Appointed for 1 year.) 1949. 1952

### 2. GENERAL FIELD OF ACTIVITIES.

The Council has presented its initial programme and policy in the form of a widely-circulated bulletin entitled "Objects and Policy—An Initial Statement" which has been approved by the Government and laid on the Table of both Houses of Parliament.

During the year it has proceeded to develop this policy along the following lines: the setting-up and staffing of certain national laboratories and research services, the organisation and carrying out of a programme

ondersteuning van navorsing aan universiteite en dergelike inrigtings, die organiseer van verenigings vir nywerheidsnavorsing en die oprigting van komitees om die Raad van advies te dien oor nodige toekomstige ontwikkelings.

Daar was besonder goeie vordering op al hierdie gebiede. Dit kos heelwat tyd om personeel van alle soorte te werf en te keur, sodat laboratoriums uitgerus en navorsingswerk aan die gang gesit kan word, maar die Raad meen dat hy in die een jaar sedert sy stigting goed gevorder het.

3. NASIONALE NAVORSINGSLABORATORIUMS EN DIENSTE.

(a) *Geboue.*

Die hoofkantoor van die Raad en party van sy laboratoriums is in blokke 1, 2 en 11 van die Ammunisie-afdeling van die Suid-Afrikaanse Munt, Visagiestraat, Pretoria, gevestig. Daar word hier en daar verbou met die oog op laboratoriuminrigting, waarna hierdie geboue etlike jare uitstekend as tydelike huisvesting kan dien. Daardeur sal die Raad 'n duideliker beeld kan kry van die uiteindelike vorm wat sy laboratoriums en organisasie moet aanneem en van die permanente gebou wat hy nodig sal hê.

(b) *Afdeling Biblioteek en Inligting.*

Hierdie afdeling bestaan al omtrent ses maande en gee elke maand 'n bulletin uit van uittreksels uit nuut aangekome wetenskaplike en tegniese pamflette, verslae en boeke uit die buiteland. Die bulletin word wyd versprei onder wetenskaplike en tegniese navorsers in Suidelike Afrika. Die afdeling ontvang reeds oor die honderd versoeke per maand van buitestaanders wat van dié publikasies wil leen.

Die afdeling het ook tegniese navrae op allerlei gebied ontvang, baie waarvan meegebring het dat die afdeling in die buiteland navraag moes doen. Onder andere is die volgende onderwerpe behandel:—

> Mikrofilm- en fotostatiese opnames van wetenskaplike verhandelings uit die buiteland, vrae in verband met nuwe kunsharse om naaldhout mee te impregneer, vervaardiging van rubberdoek, lym en gelatien, waterdigtingsverbindings, bytmiddels, giftige onkruid, droging met infrarooi strale, benuttiging van klein timmerhout, gegewens omtrent temperatuur en lugvogtigheid, sproei van D.D.T. uit die lug, bakteriologiese skeikunde, laers ter vervanging van juwele, die elektroniese verhitting in die nywerheid, harding van gereedskapstaal, benuttiging van koffiekaf, ammoniumlaktaat, stofgevaar in die nywerheid en aangroei (van skelpdiere en seegewasse) aan skepe.

Die afdeling is ter beskikking van iedereen in Suid-Afrika. Net as die navraag spesiale ondersoek meebring, word daar iets gevra.



for the encouragement and support of research in universities and similar institutions, the organisation of industrial research associations, and the establishment of committees to advise it on future developments which are needed.

Progress in all these fields has been rapid. It takes a considerable time to select and obtain staff of all kinds, to equip laboratories and to get research undertakings under way, but the Council feels that it has made good progress in the space of one year since its inception.

3. NATIONAL RESEARCH LABORATORIES AND SERVICES.

(a) *Accommodation.*

The headquarters of the Council and some of its laboratories have been housed in Blocks 1, 2 and 11 of the Ammunition Section of the South African Mint, Visagie Street, Pretoria. Certain alterations are being made to provide necessary laboratory facilities and with these the buildings will give excellent temporary accommodation for several years. This will enable the Council to obtain a fuller knowledge of the final form its laboratories and organisation must take and to gauge the nature of the permanent accommodation it will require.

(b) *Library and Information Division.*

This division has been established for some six months and issues a monthly bulletin of abstracts of accessions in the form of scientific and technical pamphlets, reports and books received from overseas. The bulletin is widely distributed to scientific and technical workers in Southern Africa and already the division deals with over a hundred outside requests per month for the loan of such publications.

The division has also dealt with requests for technical information in a variety of fields, many of which have involved special enquiries overseas. The subjects dealt with have included:—

> Microfilm and photostat copies of scientific papers from overseas; questions connected with new plastics for impregnating soft woods, rubberised cloth manufacture, glue and gelatine, waterproofing compounds, pickles, poisonous weeds, infra-red drying, utilisation of small timber, temperature and humidity data, aerial spraying of D.D.T., bacteriological chemistry, jewel substitute bearings, electronics for industrial heating purposes, hardening of tool steels, uses for coffee chaff, ammonium lactate, dust hazards in industry and the fouling of ships.

The services of this division are available to anyone in South Africa. A fee is charged for special investigations or enquiries only.

(c) *Buitelandse wetenskaplike sendings.*

'n Wetenskaplike Skakelkantoor is in Suid-Afrika-huis in Londen opgerig. Behalwe dat hierdie kantoor besonder waardevolle skakelwerk van allerlei aard en groot omvang verrig, het hy ook aan die Afdeling Biblioteek en Inligting twee-en-twintig duisend spesiale tegniese verslae in die nege maande van sy bestaan aangestuur.

In November vanjaar sal die Raad die verantwoordelikheid vir die Suid-Afrikaanse Wetenskaplike Sending in Washington oorneem.

(d) *Die Nasionale Bounavorsingsinstituut.*

Dansky die samewerking van die Departement van Handel en Nywerheid het hierdie instituut al vroeg begin werk, hoewel hy nog nie al sy personeel het nie. In samewerking met die Nasionale Behuisingskomissie het hy in die Kaapse Skiereiland en elders met werklike bouproewe navorsing op tou gesit met proefhuistipes. Hy begin nou met die studie van die eienskappe en die koste van die verskillende bou-elemente en die eienskappe van spesiale boumateriaal soos dié wat vermikuliet bevat, sement en verf. Die Naturellewoningvraag word ook bestudeer.

Die instituut is gellukig dat hy 'n wakker adviesraad het waarin al die vakkundiges en balanghebbendes in die boubedryf van die land verteenwoordig is. Mnr. E. H. Dohse, die voorsitter van hierdie adviesraad, het Groot-Brittanje en die Verenigde State besoek om die organisasie van die bounavorsing in die buiteland te bestudeer. Die Raad het 'n bulletin, waarin die aanvangsplanne en die bestek van hierdie Instituut breedvoerig uiteengesit word, uitgegee.

(e) *Die Nasionale Fisiese Laboratorium.*

Die senior lede is aangestel en die laboratorium word uitgerus en gereedgemaak. Die Direkteur en een eerste navorsingsbeampte het ses maande in Brittanje en die Verenigde State deurgebring en tal van staats-, universiteits- en nywerheidslaboratoriums besoek. Twee ander lede van die personeel bring 'n jaar aan die Nasionale Fisiese Laboratorium op Teddington deur, die een in die Afdeling Warmtetegniek en die ander een in die Afdeling Ligtegniek. Die laboratorium is reeds met 'n aantal ondersoekings besig, waaromtrent daar later verslag gedoen sal word.

(f) *Telekommunikasielaboratorium.*

Hierdie klein laboratorium hou hom met radio- en radarvraagstukke besig. As uitvloeisel van die Raad se beleid om sy werksaamhede sover doenlik te desentraliseer, is hierdie laboratorium volgens 'n ooreenkoms met die Universiteit van die Witwatersrand in die Departement van Elektrotegniese Ingenieurswese van dié universiteit gevestig.

Daar is heelwat vordering gemaak met die ontwerp, ontwikkel en bou van outomatiese toestelle vir die peil van die ionosfeer. Daar word twee van hierdie toestelle gelyktydig aan die gang gehou, die een in



(c) *Overseas Scientific Missions*

A Scientific Liaison Office has been established in South Africa House, London. In addition to a great deal of valuable liaison work of various kinds, this mission has transmitted to the Library and Information Division twenty-two thousand special technical reports in the nine months it has been in operation.

The Council will take over responsibility for the South African Scientific Mission in Washington in November of this year.

(d) *The National Building Research Institute.*

This institute, thanks to the co-operation of the Department of Commerce and Industries, has made an early start, though it is not yet fully staffed. In collaboration with the National Housing Commission it has begun a project for field research on experimental types of housing in the Cape Peninsula and elsewhere. It is beginning the study of the properties and costs of the various elements of buildings and the properties of special building materials such as those containing vermiculite, cements and paints. Work is also in hand on the study of the Native housing problem.

The institute has the advantage of an energetic Advisory Board representing all the professional and other building interests of the country. Mr. E. H. Dohse, the chairman of this board, has paid visits to Great Britain and the United States to study the organisation of building research overseas. A bulletin outlining in detail the initial plans and the scope of this institute has been issued by the Council.

(e) *The National Physical Laboratory.*

The senior staff of this laboratory have been appointed and it is being equipped and prepared for work. The Director and one principal research officer have spent six months in Britain and the United States visiting a large number of national, university and industrial laboratories. Two other members of the staff are spending a year at the National Physical Laboratory, Teddington, in the divisions of Heat and Light, respectively. The laboratory already has a number of investigations in hand which will be reported on later.

(f) *Telecommunications Research Laboratory.*

This small laboratory deals with problems of radio and radar. It is an example of the Council's policy of decentralising its activities whenever practicable and is housed, by arrangement with the University of the Witwatersrand, in the Department of Electrical Engineering of that University.

It has made considerable progress in the design, development and construction of automatic equipment for the sounding of the ionosphere, and is operating two such equipments continuously, one in Johannesburg

Johannesburg en die ander een met behulp van die Posmeester-generaal op Slangkop naby Kaapstad. Die resultate hiervan is vir die goeie werking van die radioskakels van die Poskantoor, die lugdiens en die Departement van Verdediging noodsaaklik. Dit sal waarskynlik van groot waarde vir die Suid-Afrikaanse Uitsaaikorporasie wees.

Die laboratorium werk ook aan sekere nuwe radarontwikkelings wat van belang vir Suid-Afrika is en doen ondergronds proewe vir die Kamer van Mynwese in verband met die uitvoerbaarheid van radioverbinding by reddingswerk in myne.

(g) *Die Nasionale Chemiese Navorsingslaboratorium.*

Daar is nog nie 'n sentrale laboratorium vir chemiese navorsing opgerig nie, hoewel die planne gereed is. Ondertussen is twee selfstandige afdelings daarvan georganiseer en al enige tyd in werking. Die eerste moet hom met die skeikunde van olie, vet en was besighou en is volgens 'n ooreenkoms met die Universiteit van Kaapstad in die Departement van Skeikunde van dié universiteit gevestig.

Hierdie afdeling bestudeer vraagstukke in verband met Suid-Afrikaanse visolies, veral met die oog op die gebruik daarvan by die bestryking van oppervlaktes. Ook word die voorkoms van rutien in Suid-Afrikaanse plante ondersoek.

Die tweede afdeling is by die Suid-Afrikaanse Instituut vir Mediese Navorsing gevestig en bestudeer vraagstukke in verband met die voeding van die Afrikaanse Inboorling, veral die metabolisme van minerale.

(h) *Die Nasionale Buro vir Personeelnavorsing.*

Hierdie buro is in Maart 1946 gestig en het hom in die afgelope ses maande met tal van belangrike navorsingsprobleme in verband met aanlegtoetse en nywerheidsielkunde besiggehou. Hierdie probleme is voorgelê deur die Suid-Afrikaanse Lugmag, die Hoofposkantoor, die Burgerlike Lugvaartraad, die Transvaalse Vereniging van Klerefabrikante, die Kamer van Mynwese en ander private firmas en liggame. Verskeie van hierdie ondersoekings handel oor die belangrike vraag van die wetenskaplike toetsing van die Naturel se aanleg vir werk in die nywerheid, sowel as werksman en in verantwoordeliker betrekkings. Daarby moes die buro heelwat aanlegtoetse vir die Departement van Verdediging en die Direksie van Demobilisasie uitvoer.

4. ONDERSTEUNING VAN NAVORSING AAN UNIVERSITEITE EN DERGELIKE INRIGTINGS.

Die Raad het nou die verantwoordelikhede van die Nasionale Navorsingsraad en die Nasionale Navorsingsbestuur in verband met universiteitsbeurse en toekennings vir wetenskaplike navorsing oorgeneem. In oorleg met die universiteite het hy 'n uitvoerige skema vir die verdere ondersteuning van navorsing aan sulke inrigtings uitgewerk.



and the other, with the assistance of the Postmaster-General, at Slangkop, near Cape Town. The information obtained from these equipments is essential to the effective operation of wireless communication links by the Post Office, the Air Services and the Department of Defence. It is likely to be of great value to the South African Broadcasting Corporation.

The laboratory is also engaged on certain new radar developments of importance to South Africa and is carrying out trials underground for the Chamber of Mines to examine the possibility of using wireless communication in mine rescue work.

(g) *The National Chemical Research Laboratory.*

A central laboratory for chemical research has not yet been set up, though plans have been prepared. Two decentralised units of it have meanwhile been organised and working for some time. The first is a unit to deal with the chemistry of oils, fats and waxes, housed by arrangement with the University of Cape Town in the Department of Chemistry of that University.

This unit is studying problems connected with South African fish oils, in particular the development of their use in surface coatings and problems concerning the distribution of rutin in South African plants.

The second unit is housed in the South African Institute for Medical Research and is studying problems of the nutrition of the African Native, in particular mineral metabolism.

(h) *The National Bureau for Personnel Research.*

This bureau was formed in March, 1946, and has been occupied during the past six months with a number of important research problems in aptitude testing and industrial psychology. These have been put to it by the South African Air Force, the General Post Office, the Civil Aviation Council, the Transvaal Clothing Manufacturers' Association, the Chamber of Mines and other private firms and organisations. Several of these investigations are concerned with the important question of scientifically testing the aptitude of the Native for industrial work both as an operative and in more responsible positions. In addition, the bureau has been called upon to do a considerable amount of aptitude testing for the Department of Defence and the Directorate of Demobilisation.

4. THE SUPPORT OF RESEARCH IN UNIVERSITIES AND SIMILAR INSTITUTIONS.

The Council has now taken over the responsibilities of the National Research Council and Board in regard to university bursaries and grants for scientific research. In consultation with the universities, it has developed a detailed scheme for further supporting such research by the provision of bursaries, research assistantships and grants. This

Die Raad stel byvoorbeeld beurse, navorsingsassistente en toekennings beskikbaar. Die skema het vanjaar in werking getree; 26 navorsingsbeurse is toegeken, terwyl tal van toekennings ter ondersteuning van navorsingswerk gedoen is. Die Raad se werksaamhede op hierdie terrein is nie tot die universiteite beperk nie, hoewel hy verkies dat aanvraers onder 'n universiteit of 'n soortgelyke inrigting werk.

Gedurende die jaar het die Raad senior beurse vir navorsing toegeken aan dr. L. H. Ahrens van die Universiteit van die Witwatersrand (geochemie) en dr. W. J. Lütjeharms van die Universiteitskollege van die Oranje-Vrystaat (mikrobiologie).

Die Raad het ook aansoeke om ondersteuning van navorsing oor voeding deur bemiddeling van die Navorsingskomitee van die Nasionale Voedingsraad ontvang en toegestaan.

5. VERENIGINGS VIR NYWERHEIDSNAVORSING.

Die Raad het kragdadig voortgegaan met die organiseer van verenigings vir nywerheidsnavorsing as selfstandige liggame onder bestuur van die verskillende nywerhede vir die navorsing van vraagstukke waarmee die nywerheid as geheel te kampe het. In hierdie opsig is die Raad baie gehelp deur dr. S. G. Shuttleworth, wat deeltyds deur die Navorsingsinstituut van die Leernywerheid afgestaan is om behulpsaam te wees met die ondersoek van die vraag watter nywerhede die beste geskik is vir so 'n organisasie en om hulle oor die beste werkwyse te adviseer.

Gedurende die jaar het die Raad 'n ooreenkoms aangegaan waarvolgens hy die Navorsingsinstituut van die Leernywerheid op Grahamstad as selfstandige navorsingsvereniging sal subsidieer. Die onderhandelings is nagenoeg afgeloop in verband met die stigting van 'n navorsingsvereniging vir die visserynywerheid in Kaapstad en 'n navorsingsvereniging vir die verfnywerheid in Durban. 'n Aantal ander nywerhede het aksiekomitees gestig om met die Raad te onderhandel oor die stigting van navorsingsverenigings. Die Raad is besig om hierdie voorstelle te ondersoek en advies daaroor uit te bring.

6. NAVORSINGSKOMITEES.

'n Verteenwoordigende MEDIESE NAVORSINGSKOMITEE is deur die Raad byeengeroep en het drie vergaderings gehou om 'n program tot bevordering en ontwikkeling van mediese navorsing te oorweeg. Die Raad het aanbeveel dat die voorlopige voortselle van hierdie komitee tot ondersteuning en aanmoediging van mediese navorsing aangeneem word.

Gedurende die jaar het daar ook komitees oor VLIEGPERSONEELNAVORSING en LUGVAARTKUNDIGE NAVORSING byeengekom.



scheme has been in operation during the present year; 26 research bursaries and numerous grants in aid of research have been awarded. The Council's activities in this field are not restricted to universities though it prefers applicants to be sponsored by university or similar institutions.

During the year the Council has awarded senior bursaries (fellowships) for research to Dr. L. H. Ahrens of the University of the Witwatersrand (Geochemistry) and Dr. W. J. Lütjeharms of the University College of the Orange Free State (Microbiology).

The Council has also supported applications for assistance in research on nutrition put forward through the Research Committee of the National Nutrition Council.

5. INDUSTRIAL RESEARCH ASSOCIATIONS.

The Council has actively pursued the organisation of industrial research associations as autonomous bodies, controlled by various industries, for the prosecution of research on problems common to each industry as a whole. In this work it has had much assistance from Dr. S. G. Shuttleworth, whose part-time services have been made available by the Leather Industries Research Institute to assist in investigating what industries are best suited for such organisation and in advising them on how to proceed.

During the year the Council has concluded an agreement under which it will subsidise the Leather Industries Research Institute, Grahamstown, as an autonomous research association. Negotiations are practically complete for a Fishing Industries Research Association in Cape Town and a Paint Industries Research Association in Durban. A number of other industries have formed action committees with a view to negotiating with the Council for the formation of research associations and the Council is examining and advising on these proposals.

6. RESEARCH COMMITTEES.

A representative MEDICAL RESEARCH COMMITTEE called together by the Council has held three meetings to consider a programme for the support and development of medical research. The Council has recommended the adoption of the initial proposals put forward by this Committee for the support and encouragement of medical research.

Committees on AIR PERSONNEL RESEARCH and on AERONAUTICAL RESEARCH have also met during the year.

7. SKENKINGS EN TOEKENNINGS AAN DIE RAAD.

Die Raad erken die ontvangs van 'n skenking van een-honderd ghienies van mnr. W. Elsdon Dew tot uitrusting van die Nasionale Fisiese Laboratorium en van 'n toekenning van eenduisend pond van die Suid-Afrikaanse Uitsaaikorporasie vir die werk van die Telekommunikasielaboratorium oor ionosfeerpeiling en verwante sake. Die Raad het ook 'n ionosfeerregistreerder van die Admiraliteit present gekry. Die Raad wil sy dank aan al hierdie skenkers uitspreek.



7. DONATIONS AND GRANTS MADE TO THE COUNCIL.

The Council acknowledges the receipt of a donation of one hundred guineas from Mr. W. Elsdon Dew towards the equipment of the National Physical Laboratory, and of a grant of £1,000 from the South African Broadcasting Corporation for work by the Telecommunications Research Laboratory on ionospheric sounding and allied matters. The Council also acknowledges the gift of an ionosphere recorder by the Admiralty. The Council desires to express its gratitude for these donations and grants.

STAFF OF THE COUNCIL/PERSONEEL VAN DIE RAAD.

The following is a list of the staff of the Council as at 5th October, 1946:—
Hieronder volg die personeelstand van die Raad op 5 Oktober 1946:—

HEADQUARTERS ADMINISTRATION/HOOFKANTOORADMINISTRASIE.

| | | |
|---|---|---|
| *President* | B. F. J. Schonland, C.B.E., M.A., Ph.D., Hon. D.Sc. (Cape/Kaap & Cantab.), F.R.S. | *President* |
| *Secretary/Treasurer* | J. R. Sorrie, B.A. | *Sekretaris-tesourier* |
| *Research Officer, Scientific Assistant to President* | D. G. Kingwill, M.Sc. | *Navorsingsbeampte, Wetenskaplike Assistent van President* |
| *Senior Administrative Officers* | L. A. W. Skinner, B.Com.<br>F. J. Bath, B.Com. | *Senior Administratiewe Beamptes* |
| *Clerks* | M. J. Kleynhans.<br>D. Hamman.<br>M. C. van Wyk. | *Klerke* |
| *Shorthand-Typists* | Miss/Mej. M. A. Murray.<br>Miss/Mej. F. A. Gimber. | *Snelskriftiksters* |
| *Typist* | Miss/Mej. P. F. Lempke. | *Tikster* |
| *Senior Registry Clerk* | Miss/Mej. T. G. G. Halberstadt, B.Com. | *Senior-registrasieklerk* |
| *Telephone Exchange Operator* | Miss/Mej. M. M. van Rensburg | *Telefoniste* |
| *Native Messengers* | Two/Twee | *Naturellebodes* |

LIBRARY AND INFORMATION DIVISION/AFDELING BIBLIOTEEK EN INLIGTING.

| | | |
|---|---|---|
| *Senior Research Officer* | Miss/Mej. Hazel Mews, M.A. (Lond.), F.L.A., (Head of Division/Hoof van Afdeling) | *Senior Navorsingsbeampte* |
| *Senior Registry Clerks/ Abstractors* | Miss/Mej. D. E. Brown, B.A.<br>Miss/Mej. E. M. Odendal, B.A. | *Senior Registrasieklerke/ Ekserpeerders* |



SOUTH AFRICAN SCIENTIFIC LIAISON OFFICE, LONDON.
SUID-AFRIKAANSE WETENSKAPLIKE SKAKELKANTOOR, LONDEN.

| | | |
|---|---|---|
| *Research Officers* | E. Boden, M.Sc. (Head of Liaison Office/Hoof van Skakelkantoor).<br>D. R. Masson, B.Sc. (Chem. Eng.). | *Navorsingsbeamptes* |
| *Filing/Registry Clerk* | Mrs./Mev. E. M. Baird. | *Lêer-/Registrasieklerk* |
| *Typist/Clerks* | Miss/Mej. N. E. Mead.<br>Mrs./Mev. G. C. Mann. | *Tikster-klerke* |

SOUTH AFRICAN SCIENTIFIC LIAISON OFFICE, WASHINGTON.
SUID-AFRIKAANSE WETENSKAPLIKE SKAKELKANTOOR, WASHINGTON.

| | | |
|---|---|---|
| *Senior Research Officer* | E. P. Phillips, M.A., D.Sc. (Head of Liaison Office/ Hoof van Skakelkantoor). | *Senior Navorsingsbeampte* |

NATIONAL PHYSICAL LABORATORY/NASIONALE FISIESE LABORATORIUM.

| | | |
|---|---|---|
| *Director* | S. M. Naudé, M.Sc., Ph.D. | *Direkteur* |
| *Principal Research Officer* | R. Guelke, Ph.D. | *Eerste Navorsingsbeampte* |
| *Senior Research Officer* | E. C. Halliday, Ph.D. | *Senior Navorsingsbeampte* |
| *Research Officers* | E. J. Marais, M.Sc., D.Sc.<br>S. C. Mossop, M.Sc.<br>J. P. A. Lochner, B.Sc. (Eng.), Ph.D. | *Navorsingsbeamptes* |
| *Assistant Research Officer* | F. Anderson, B.Sc. (Eng.) | *Assistent-navorsingsbeampte* |
| *Scientific Asst., Class I* | G. A. O'Grady. | *Wetenskaplike Asst., Klas I* |
| *Scientific Asst., Class II* | I. le Sueur. | *Wetenskaplike Asst., Klas II* |
| *Shorthand-Typist* | Miss/Mej. L. Westerveld. | *Snelskriftikster* |
| *Native Messengers* | Two/Twee. | *Naturellebodes* |

TELECOMMUNICATIONS RESEARCH LABORATORY/TELEKOMMUNIKASIELABORATORIUM.

| | | |
|---|---|---|
| *Senior Research Officer* | F. J. Hewitt, M.Sc. (Officer-in-Charge/Verantwoordelike beampte) | *Senior Navorsingsbeampte* |
| *Research Officers* | J. A. Fejer, Dip.Elec.Eng. (Zürich).<br>T. L. Wadley, B.Sc. (Elec. Eng.).<br>P. Meerholz, M.Sc. | *Navorsingsbeamptes* |
| *Scientific Asst., Class II* | C. H. Meredith.<br>Miss/Mej. J. Hewitt, M.Sc. | *Wetenskaplike Asst., Klas II* |
| *Senior Registry Clerk/ Abstractor* | Miss/Mej. S. E. H. Laver, B.A. | *Senior Registrasieklerk/ Ekserpeerder* |

NATIONAL BUILDING RESEARCH INSTITUTE/ NASIONALE BOUNAVORSINGSINSTITUUT.

| | | |
|---|---|---|
| *Principal Research Officer (Acting Director)* | J. E. Jennings, B.Sc. (Eng.), M.Sc. | *Eerste Navorsingsbeampte (Waarnemende Direkteur)* |
| *Principal Research Officer* | A. J. A. Roux, B.Sc. (Hons.), M.Sc. (Eng.), D.Sc. (Eng.). | *Eerste Navorsingsbeampte* |
| *Research Officers* | N. Stutterheim, B.Sc. (Eng.).<br>D. J. Henkel, B.Sc. (Eng.).<br>G. W. Fletcher, B.Sc.<br>P. H. Connell, B.Arch., A.R.I.B.A., M.I.A.<br>B. D. Kark, B.Sc., B.Sc. (Eng.).<br>W. Steenkamp, B.Sc. (Eng.), M.Sc. | *Navorsingsbeamptes* |
| *Scientific Asst., Class I* | E. O. Garnett.<br>J. H. Franks.<br>J. McIntosh. | *Wetenskaplike Asst., Klas I* |
| *Scientific Asst., Class II* | J. F. Fourie.<br>S. R. Harrison.<br>N. A. Naylor. | *Wetenskaplike Asst., Klas II* |
| *Senior Registry Clerk/ Abstractor* | Miss/Mej. S. de Beer, B.A. | *Senior Registrasieklerk/ Ekserpeerder* |
| *Shorthand-Typist* | Miss/Mej. U. van Niekerk | *Snelskriftikster* |
| *Typist* | Miss/Mej. P. E. Waterson | *Tikster* |
| *Native Messengers* | Two/Twee. | *Naturellebodes* |

NATIONAL BUREAU FOR PERSONNEL RESEARCH.
NASIONALE BURO VIR PERSONEELNAVORSING.

| | | |
|---|---|---|
| *Principal Research Officer* | S. Biesheuvel, M.B.E., M.A., Ph.D. (Head of Bureau/Hoof van Buro). | *Eerste Navorsingsbeampte* |
| *Research Officers* | R. V. Sutton, B.A.<br>Miss/Mej. M. E. White, M.Sc.<br>Miss/Mej. E. Morrison, B.A. | *Navorsingsbeamptes* |
| *Scientific Asst., Class II* | Miss/Mej. M. Lowe, B.Sc. | *Wetenskaplike Asst., Klas II* |
| *Scientific Asst., Class III* | Miss/Mej. B. P. Hall, B.A.<br>Miss/Mej. D. R. Becklake, B.A.<br>Miss/Mej. M. J. Goldstein, M.A.<br>Miss/Mej. J. G. F. Biggs, B.A.<br>W. T. v. S. Naudé, M.A. | *Wetenskaplike Asst., Klas III* |
| *Senior Registry Clerk/ Abstractor* | Miss/Mej. J. E. van der Horst, B.A. | *Senior Registrasieklerk/ Ekserpeerder* |



| | | |
|---|---|---|
| *Filing/Registry Clerks* | Miss/Mej. P. M. Rawling.<br>Miss/Mej. A. Rootman.<br>Miss/Mej. G. C. Steyn. | *Lêer-/registrasieklerke* |
| *Shorthand-Typist* | Miss/Mej. M. A. Stent. | *Snelskriftikster* |
| *Native Messenger* | One/Een. | *Naturellebode* |

NATIONAL CHEMICAL RESEARCH LABORATORY.
NASIONALE CHEMIESE NAVORSINGSLABORATORIUM.

| | | |
|---|---|---|
| *Director (designate)* | W. S. Rapson, M.Sc. (N.Z.), D.Phil. (Oxon.), F.R.I.C. | *Direkteur (aangewys)* |
| *Assistant Research Officer* | J. N. Wanklyn, B.Sc. (Eng.) | *Assistent-navorsingsbeampte* |
| *Scientific Asst., Class I* | A. W. C. White. | *Wetenskaplike Asst., Klas I* |

OILS, FATS, WAXES AND PROTEINS UNIT, UNIVERSITY OF CAPE TOWN.
AFDELING VIR OLIE, VET, WAS EN PROTEINES, UNIVERSITEIT VAN KAAPSTAD.

| | | |
|---|---|---|
| *Research Officer* | Miss/Mej. H. M. Schwartz, M.Sc., Ph.D. | *Navorsingsbeampte* |
| *Scientific Asst., Class II* | Miss/Mej. M. M. Black, B.Sc. | *Wetenskaplike Asst., Klas II* |

BIOCHEMICAL NUTRITION UNIT, S.A. INSTITUTE FOR MEDICAL RESEARCH.
AFDELING VIR BIOCHEMIESE VOEDING, S.A. INSTITUUT VIR MEDIESE NAVORSING.

| | | |
|---|---|---|
| *Research Officer* | A. R. P. Walker, M.Sc. | *Navorsingsbeampte* |

## COMMITTEES OF THE COUNCIL/KOMITEES VAN DIE RAAD.

### MEDICAL RESEARCH COMMITTEE/MEDIESE NAVORSINGSKOMITEE.

| | | |
|---|---|---|
| *Member of C.S.I.R. and Director of Veterinary Services. (Chairman.)* | Dr. P. J. du Toit. | *Lid van W.N.N.R. en Direkteur van die Veeartsenydiens. (Voorsitter)* |
| *Secretary for Health* | Dr. G. W. Gale. | *Sekretaris van Gesondheid* |
| *University of the Witwatersrand* | Prof. R. Dart. | *Universiteit van die Witwatersrand* |
| *University of Cape Town* | Prof. J. T. Irving. | *Universiteit van Kaapstad* |
| *University of Pretoria* | Prof. S. F. Oosthuizen. | *Universiteit van Pretoria* |
| *South African Medical Council* | Dr. A. J. Pijper. | *Suid-Afrikaanse Mediese Raad* |
| *Medical Association of South Africa* | Prof. J. F. Brock. | *Mediese Vereniging van Suid-Afrika* |
| *S.A. Institute for Medical Research* | Dr. E. H. Cluver. | *S.A. Instituut vir Mediese Navorsing* |
| *Director-General of Medical Services* | Brig. W. H. du Plessis. | *Direkteur-generaal van die Geneeskundige Diens* |

### BUILDING RESEARCH ADVISORY COMMITTEE/ADVIESKOMITEE VIR BOUNAVORSING.

| | | |
|---|---|---|
| *Chairman. (Chief Engineer, P.W.D.)* | E. W. Dohse. | *Voorsitter. (Hoofingenieur, D.P.W.)* |
| *Vice-Chairman. S.A. Society of Civil Engineers. Institution of Structural Engineers.* | Dr. F. E. Kanthack. | *Vise-voorsitter. S.A. Vereniging van Boukundige Ingenieurs. Instituut van Konstruksie-ingenieurs* |
| *Building Materials Controller* | C. L. F. Borckenhagen. | *Beheer oor Boumateriaal* |
| *Building Control* | V. Hicks. | *Boubeheer* |
| *Institution of Municipal and County Engineers* | Dr. E. J. Hamlin. | *Instituut van Stads- en Distriksingenieurs* |
| *Institute of S.A. Architects. Chapter of S.A. Quantity Surveyors* | N. L. Hanson. | *Instituut van S.A. Argitekte. Vereniging van S.A. Bestekopmakers* |
| *National Federation of Building Trade Employers. Federation of Civil Engineering Contractors* | A. H. Roberts | *Nasionale Federasie van Werkgewers in die Boubedryf. S.A. Federasie van Aannemers in die Boukundige Ingenieursbedryf* |



| | | |
|---|---|---|
| *National Housing and Planning Commission* | J. C. Collings. | *Nasionale Behuisings- en Plannekommissie* |
| *Public Works Department* | F. W. Mullins.<br>R. J. C. Prentice. | *Departement van Publieke Werke* |
| *S.A. Railways and Harbours* | T. J. Dry. | *S.A. Spoorweë en Hawens* |
| *S.A. Federation of Engineering and Metallurgical Associations* | B. G. Twycross. | *S.A. Federasie van Ingenieurs- en Metallurgiese Verenigings* |
| *S.A. Institution of Engineers. S.A. Institute of Electrical Engineers. Institution of Certificated Engineers* | J. White. | *S.A. Instituut van Ingenieurs. S.A. Instituut van Elektrotegniese Ingenieurs. Instituut van Gediplomeerde Ingenieurs* |
| *S.A. Trades and Labour Council* | H. F. Tyler. | *S.A. Vak- en Arbeidsraad* |
| *Geological Society of S.A.* | G. V. White. | *Geologiese Vereniging van S.A.* |
| *University of the Witwatersrand* | W. G. Sutton. | *Universiteit van die Witwatersrand* |
| *Division of Native Affairs, Southern Rhodesia* | A. C. Jennings.* | *Afdeling Naturellesake, Suid-Rhodesië* |
| *Natal Housing Board* | T. M. Wadley.* | *Natalse Woningraad* |
| *Natal University College* | W. M. Thomas.*<br>D. Calvert McDonald.* | *Natalse Universiteitskollege* |
| *University of Cape Town* | Prof. L. W. Thornton White.* | *Universiteit van Kaapstad* |
| *University of Pretoria* | Prof. A. L. Meiring. | *Universiteit van Pretoria* |
| *University of Stellenbosch* | Prof. H. L. Reitz.* | *Universiteit van Stellenbosch* |

* Corresponding Members.
* Korrespondente.

### TELECOMMUNICATIONS ADVISORY COMMITTEE/ADVIESKOMITEE VIR TELEKOMMUNIKASIE.

| | | |
|---|---|---|
| *Chairman (Senior Lecturer, University of the Witwatersrand)* | G. R. Bozzoli. | *Voorsitter, (Senior Lektor, Universiteit van die Witwatersrand)* |
| *University of the Witwatersrand and C.S.I.R.* | Dr. Bernard Price. | *Universiteit van die Witwatersrand en W.N.N.R.* |
| *University of the Witwatersrand* | W. Cormack. | *Universiteit van die Witwatersrand* |
| *Chief Electrical Engineer's Dept., S.A.R. and H.* | M. W. Manson. | *Afdeling van die Elektrotegniese Hoofingenieur, S.A.S. en H.* |
| *Deputy Director, Bernard Price Institute* | Dr. P. G. Gane. | *Adjunk-direkteur, Bernard Price-instituut* |
| *Chief Telecommunications Engineer, Civil Aviation, Department of Transport* | G. A. Harvey. | *Hoofteleckommunikasie-ingenieur, Burgerlike Lugvaart, Dept. van Vervoer* |

| | | |
|---|---|---|
| *Chief Engineer, S.A.B.C.* | W. Hilarius. | *Hoofingenieur, S.A.U.K.* |
| *Trigonometrical Survey* | Col./Kol. N. G. Huntly. | *Trigonometriese Opmeting* |
| *Technical Advisory Committee, S.A.B.C.* | Col./Kol. S. F. Kos. | *Tegniese Advieskomitee, S.A.U.K.* |
| *Postmaster-General's Department* | H. S. Mills. | *Afdeling van die Posmeester-generaal* |
| *Union Astronomer* | Dr. W. H. van den Bos. | *Unie-sterrekundige* |
| *Department of Defence* | Col./Kol. F. Collins. | *Departement van Verdediging* |
| *Natal University College* | Prof. H. Clark.* | *Natalse Universiteitskollege* |
| *University of Cape Town* | Prof. B. L. Goodlet.* | *Universiteit van Kaapstad* |
| *University of Stellenbosch* | C. L. Olein.* | *Universiteit van Stellenbosch* |
| *Meteorological Services* | P. Low. | *Meteorologiese Diens* |
| S.A.A.F. | Major/Majoor G. N. Robertson. | S.A.L.M. |

* Corresponding Members.
* Korrespondente.

INTERIM ADVISORY COMMITTEE ON PERSONNEL RESEARCH.
VOORLOPIGE ADVIESKOMITEE VIR PERSONEELNAVORSING.

Dr. R. W. Wilcocks.
Dr. P. A. W. Cook.
Dr. S. Biesheuvel.

INTERIM LIBRARY ADVISORY COMMITTEE/VOORLOPIGE BIBLIOTEEK ADVIESKOMITEE.

| | | |
|---|---|---|
| *Librarian, City of Johannesburg* | R. F. Kennedy. | *Bibliotekaris, Stad Johannesburg* |
| *Librarian, University of the Witwatersrand* | P. Freer. | *Bibliotekaris, Universiteit van die Witwatersrand* |
| *State Librarian, Pretoria* | M. M. Stirling. | *Staatsbibliotekaris, Pretoria* |
| *Department of Commerce and Industries* | Dr. F. J. de Villiers. | *Departement van Handel en Nywerheid* |

AIR PERSONNEL RESEARCH COMMITTEE/NAVORSINGSKOMITEE VIR VLIEGPERSONEEL.

| | | |
|---|---|---|
| *Principal, University of the Witwatersrand (Chairman)* | H. R. Raikes. | *Prinsipaal, Universiteit van die Witwatersrand (Voorsitter)* |
| *Director-General of Medical Services* | Brig. W. H. du Plessis. | *Direkteur-generaal van die Geneeskundige Diens* |
| *Director-General of the Air Force* | Brig. H. G. Willmott. | *Direkteur-generaal van die Lugmag* |
| *Aviation Medical Laboratory* | Capt./Kapt. R. Cheetham. | *Lugvaartmediese Laboratorium* |
| *University of the Witwatersrand* | Dr. J. H. Gear. | *Universiteit van die Witwatersrand* |
| *Principal Medical Officer, R.A.F.* | Wing-Comdr./Vleuelkmdr. L. S. Everitt. | *Eerste Offisier-geneeskundige, R.A.F.* |



| | | |
|---|---|---|
| *Central Medical Establishment* | Major/Majoor J. S. Enslin. | *Sentrale Mediese Inrigting* |
| *Director of the National Bureau for Personnel Research, C.S.I.R.* | Dr. S. Biesheuvel. | *Direkteur van die Nasionale Buro vir Personeelnavorsing, W.N.N.R.* |
| *University of Stellenbosch* | Prof. J. A. J. van Rensburg. | *Universiteit van Stellenbosch* |
| *University of Cape Town* | Prof. J. T. Irving. | *Universiteit van Kaapstad* |
| *South African Airways* | D. C. Hogg. | *Suid-Afrikaanse Lugdiens* |
| *South African Airways* | J. Adam. | *Suid-Afrikaanse Lugdiens* |
| *Civil Aviation Council* | The Secretary/Die Sekretaris. | *Burgerlike Lugvaartraad* |
| *Civil Aviation Advisory Committee* | The Secretary/Die Sekretaris. | *Advieskomitee vir Burgerlike Lugvaart* |
| *Previously Senior Consultant in Medicine, D.G.M.S.* | Dr. W. H. Craib. | *Voorheen Senior Konsultarts, D.G.G.D.* |

ADVISORY COMMITTEE ON AERONAUTICAL RESEARCH AND INFORMATION.
ADVIESKOMITEE VIR LUGVAARTKUNDIGE NAVORSING EN INLIGTING.

| | | |
|---|---|---|
| *Chief Inspector of Aircraft, Ministry of Transport* | Major/Majoor J. Blamire. | *Hoofvliegtuiginspekteur, Ministerie van Vervoer* |
| S.A.A.F. | Major/Majoor R. A. Powell | S.A.L.M. |

## WETENSKAPLIKE EN NYWERHEIDNAVORSINGSRAAD.
## BALANSTAAT OP 31/3/46.

### LASTE.

| | £ s. d. | £ s. d. |
|---|---|---|
| Kapitaalfonds: bewilliging deur Volksraad | 10,500 0 0 | |
| Voeg by Skenking | 105 5 0 | |
| | | 10,605 5 0 |
| Diverse Krediteure: | | |
| Rente | 4,130 0 0 | |
| Meubels en vaste Uitrusting | 1,710 0 0 | |
| Kantooruitrusting | 271 0 0 | |
| | | 6,111 0 0 |
| Voeg by bedrag inkomste bo uitgawe vir tydperk geëindig 31/3/46 | | 17,386 16 5 |
| | | £34,103 1 5 |

### BATE.

| | £ s. d. | £ s. d. |
|---|---|---|
| Kontant in bank: | | |
| Rekening vir lopende koste | 21,644 18 5 | |
| Kapitaalfonds | 10,291 19 3 | |
| | | 31,936 17 8 |
| Kleinkas in hande | | 1 4 3 |
| Meubels en vaste uitrusting | 1,710 0 0 | |
| *Min* waardevermindering teen 10% p.j. | 85 10 0 | |
| | | 1,624 10 0 |
| Kantooruitrusting | 345 19 5 | |
| *Min* waardevermindering teen 15% p.j. | 25 18 11 | |
| | | 320 0 6 |
| Laboratoriumuitrusting (vas) | 95 4 11 | |
| *Min* waardevermindering teen 15% p.j. | 7 2 10 | |
| | | 88 2 1 |
| Laboratoriumuitrusting (los) | 6 3 6 | |
| *Min* waardevermindering teen 15% p.j. | 9 2 | |
| | | 5 14 4 |
| Los gereedskap | 136 17 11 | |
| *Min* waardevermindering teen 15% p.j. | 10 5 4 | |
| | | 126 12 7 |
| | | £34,103 1 5 |

ONDER my toesig geouditeer en vir juis gesertifiseer onder voorbehoud van die opmerkings in die verslag.

(Geteken) C. J. K. LOVEDAY.
vir: *Kontroleur en Ouditeur-Generaal.*

PRETORIA, 1 Julie 1946.

(Geteken) B. F. J. SCHONLAND, *President.*
R. SORRIE, *Sekretaris/Tesourier.*
PRETORIA, 26 April 1946.

## COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH.
## BALANCE SHEET AS AT 31/3/1946.

### LIABILITIES.

| | £ s. d. | £ s. d. |
|---|---|---|
| Capital Fund: Parliamentary Grant | 10,500 0 0 | |
| *Add* Donation | 105 5 0 | |
| | | 10,605 5 0 |
| Sundry Creditors: | | |
| Rent accrued | 4,130 0 0 | |
| Furniture and Fittings | 1,710 0 0 | |
| Office equipment | 271 0 0 | |
| | | 6,111 0 0 |
| *Add* Excess of Revenue over Expenditure for the period ended 31/3/46 | | 17,386 16 5 |
| | | £34,103 1 5 |

### ASSETS.

| | £ s. d. | £ s. d. |
|---|---|---|
| Cash at Bank: | | |
| Running Expense Account | 21,644 18 5 | |
| Capital Fund | 10,291 19 3 | |
| | | 31,936 17 8 |
| Petty Cash on Hand | | 1 4 3 |
| Furniture and Fittings | 1,710 0 0 | |
| *Less* Depreciation at 10% p.a. | 85 10 0 | |
| | | 1,624 10 0 |
| Office Equipment | 345 19 5 | |
| *Less* Depreciation at 15% p.a. | 25 18 11 | |
| | | 320 0 6 |
| Laboratory Equipment (Fixed) | 95 4 11 | |
| *Less* Depreciation at 15% p.a. | 7 2 10 | |
| | | 88 2 1 |
| Laboratory Equipment (Portable) | 6 3 6 | |
| *Less* Depreciation at 15% p.a. | 9 2 | |
| | | 5 14 4 |
| Loose Tools | 136 17 11 | |
| *Less* Depreciation at 15% p.a. | 10 5 4 | |
| | | 126 12 7 |
| | | £34,103 1 5 |

AUDITED under my directions and, subject to the remarks contained in the report, certified correct.

(Sgd.) C. J. K. LOVEDAY.
for: *Controller and Auditor-General.*

PRETORIA, 1st July, 1946.

(Sgd.) B. F. J. SCHONLAND, *President.*
J. R. SORRIE, *Secretary/Treasurer.*
PRETORIA, 26th April, 1946.

## WETENSKAPLIKE EN NYWERHEIDNAVORSINGSRAAD.

## STAAT VAN INKOMSTE EN UITGAWE VIR DIE TYDPERK 5 OKTOBER 1945 TOT 31 MAART 1946.

| UITGAWE. | £ | s. | d. | INKOMSTE. | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Salaris en lone | 5,124 | 16 | 5 | Bewilliging deur Volksraad (lopende koste) | 31,200 | 0 | 0 |
| Voorsorgfonds, bydraes van W.N.N.R. | 300 | 8 | 6 | | | | |
| Lewenskostetoelaes | 654 | 1 | 8 | | | | |
| Nie-pensioengewende toelaes | 131 | 0 | 4 | | | | |
| Reis- en verblyfkoste | 69 | 11 | 4 | | | | |
| Reis- en motorkartoelaes | 201 | 17 | 1 | | | | |
| Goewermentsvoertuie | 6 | 9 | 3 | | | | |
| Vervoerkoste, S.A.S. en H. | 185 | 3 | 7 | | | | |
| Spesiale toelaes en bywoningsgeld | 178 | 11 | 5 | | | | |
| Posgeld, telefone, telegramme | 203 | 13 | 7 | | | | |
| Drukwerk en skryfbehoeftes | 170 | 10 | 1 | | | | |
| Rente | 4,130 | 0 | 0 | | | | |
| Skoonmaak van geboue | 114 | 9 | 6 | | | | |
| Verbruiksgoedere | 372 | 7 | 7 | | | | |
| Kantooruitgawes | 28 | 12 | 8 | | | | |
| Toekennings en beurse vir navorsing | 1,476 | 10 | 0 | | | | |
| Intekengeld op koerante en tydskrifte | 36 | 2 | 10 | | | | |
| Advertensies | 131 | 4 | 3 | | | | |
| Ryloon (goedere) en skeepsvrag | 167 | 8 | 2 | | | | |
| Bankkoste | | 19 | 1 | | | | |
| Waardevermindering | 129 | 6 | 3 | | | | |
| Inkomste bo uitgawe | 17,386 | 16 | 5 | | | | |
| | £31,200 | 0 | 0 | | £31,200 | 0 | 0 |

ONDER my toesig geouditeer en vir juis gesertifiseer onder voorbehoud van die opmerkings in die verslag.

(Geteken) C. J. K. LOVEDAY.
vir: *Kontroleur en Ouditeur-Generaal.*

PRETORIA, 1 Julie 1946.

(Geteken) B. F. J. SCHONLAND, *President.*
J. R. SORRIE, *Sekretaris/Tesourier.*

PRETORIA, 26 April 1946.

## COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH.

## REVENUE AND EXPENDITURE ACCOUNT FOR THE PERIOD 5th OCTOBER, 1945, TO 31st MARCH, 1946.

| EXPENDITURE. | £ | s. | d. | REVENUE. | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Salaries and Wages | 5,124 | 16 | 5 | Parliamentary Grant (Running Expenses) | 31,200 | 0 | 0 |
| Provident Fund: C.S.I.R. Contributions | 300 | 8 | 6 | | | | |
| Cost-of-Living Allowances | 654 | 1 | 8 | | | | |
| Non-Pensionable Allowances | 131 | 0 | 4 | | | | |
| S. and T. Allowances | 69 | 11 | 4 | | | | |
| Travelling and Car Allowances | 201 | 17 | 1 | | | | |
| Government Transport | 6 | 9 | 3 | | | | |
| S.A.R. and H. Transport | 185 | 3 | 7 | | | | |
| Special Allowances and Council Attendance Fees | 178 | 11 | 5 | | | | |
| Postage, Telephones, Telegrams | 203 | 13 | 7 | | | | |
| Printing and Stationery | 170 | 10 | 1 | | | | |
| Rent Accrued | 4,130 | 0 | 0 | | | | |
| Cleaning | 114 | 9 | 6 | | | | |
| Expendable Stores | 372 | 7 | 7 | | | | |
| Office Expenses | 28 | 12 | 8 | | | | |
| Research Grants and Bursaries | 1,476 | 10 | 0 | | | | |
| Subscriptions to Newspapers and Journals | 36 | 2 | 10 | | | | |
| Advertising | 131 | 4 | 3 | | | | |
| Transport (Goods) and Freight | 167 | 8 | 2 | | | | |
| Bank Charges | | 19 | 1 | | | | |
| Depreciation | 129 | 6 | 3 | | | | |
| Surplus of Revenue over Expenditure | 17,386 | 16 | 5 | | | | |
| | £31,200 | 0 | 0 | | £31,200 | 0 | 0 |

AUDITED under my directions and, subject to the remarks contained in the report, certified correct.

(Sgd.) C. J. K. LOVEDAY.
for: *Controller and Auditor-General.*

PRETORIA, 1st July, 1946.

(Sgd.) B. F. J. SCHONLAND, *President.*
J. R. SORRIE, *Secretary/Treasurer.*

PRETORIA, 26th April, 1946.